



US Army Corps
of Engineers
Savannah District

Fort Benning Georgia

Solicitation Number
DACA21-03-R-0053
Chapel and Education Facility
FY-03, Line Item 19315
July 2003

**THIS SOLICITATION IS UNRESTRICTED PURSUANT TO THE
"BUSINESS OPPORTUNITY DEVELOPMENT REFORM ACT OF 1988"
(PUBLIC LAW 100-656)**

**U.S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640**

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SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NO. DACA21-03-R-0053-0005	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 02-Jul-2003	PAGE OF PAGES 1 OF 186
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.				
4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.		6. PROJECT NO.	
7. ISSUED BY CODE DACA21 U.S. ARMY ENGINEER DISTRICT, SAVANNAH 100 WEST OGLETHORPE AVE SAVANNAH GA 31401-3640 TEL: FAX:		8. ADDRESS OFFER TO <i>(If Other Than Item 7)</i> CODE <div style="text-align: center; font-weight: bold;">See Item 7</div> TEL: FAX:		
9. FOR INFORMATION CALL:	A. NAME LINDA G ELLIOTT		B. TELEPHONE NO. <i>(Include area code) (NO COLLECT CALLS)</i> 912/652-5076	
SOLICITATION				
NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".				
10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS <i>(Title, identifying no., date):</i> <div style="margin-top: 20px;"> Contract Specialist: Linda Elliott, Phone (912) 652-5076 E-Mail: linda.g.elliott@sas02.usace.army.mil Contracting Officer: julie.m.oliver, Phone (912) 52-5899 E-Mail: julie.m.oliver@sas02.usace.army.mil <div style="text-align: center; margin-top: 20px;"> CHAPEL AND EDUCATION CENTER FORT BENNING, GEORGIA FY-03, LINE ITEM 19315 </div> </div> <p>Proposal, to include all changes, is hereby incorporated by reference.</p>				
11. The Contractor shall begin performance within <u>5</u> calendar days and complete it within <u>600</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. <i>(See _____.)</i>				
12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			12B. CALENDAR DAYS <div style="text-align: center;">5</div>	
13. ADDITIONAL SOLICITATION REQUIREMENTS: A. Sealed offers in original and <u>5</u> copies to perform the work required are due at the place specified in Item 8 by <u>11:00 AM</u> <i>(hour)</i> local time <u>19 Sep 2003</u> <i>(date)</i> . If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due. B. An offer guarantee <input checked="" type="checkbox"/> is, <input type="checkbox"/> is not required. C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference. D. Offers providing less than <u>60</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.				

SOLICITATION, OFFER, AND AWARD (Continued) (Construction, Alteration, or Repair)										
OFFER (Must be fully completed by offeror)										
14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)					15. TELEPHONE NO. (Include area code)					
					16. REMITTANCE ADDRESS (Include only if different than Item 14) See Item 14					
CODE		FACILITY CODE								
17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)										
AMOUNTS		SEE SCHEDULE OF PRICES								
18. The offeror agrees to furnish any required performance and payment bonds.										
19. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)										
AMENDMENT NO.										
DATE										
20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)					20B. SIGNATURE				20C. OFFER DATE	
AWARD (To be completed by Government)										
21. ITEMS ACCEPTED:										
22. AMOUNT		23. ACCOUNTING AND APPROPRIATION DATA								
24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)				ITEM		25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) <input type="checkbox"/> 41 U.S.C. 253(c)				
26. ADMINISTERED BY		CODE				27. PAYMENT WILL BE MADE BY:		CODE		
CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE										
<input type="checkbox"/> 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.					<input type="checkbox"/> 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.					
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)					31A. NAME OF CONTRACTING OFFICER (Type or print)					
30B. SIGNATURE		30C. DATE			TEL:			EMAIL:		
					31B. UNITED STATES OF AMERICA BY			31C. AWARD DATE		

Section 00010 - Solicitation Contract Form

SUPPLIES OR SERVICES AND PRICES/COSTS

SCHEDULE

CHAPEL AND EDUCATION CENTER
FORT BENNING, GEORGIA

TOTAL BID
(ITEMS 0001 THROUGH 0003)----- \$ _____

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Lump Sum	\$ _____	\$ _____
	Design Effort, and Engineering Services During Construction, Complete				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Lump Sum	\$ _____	\$ _____
	Construction of Chapel and Education Facility Including Renovation in the Existing Annex, Complete to 5 Foot Building Line (FY-04, LI 019315)				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		1	Lump Sum	\$ _____	\$ _____
	Site Preparation and Development Including Utilities (Everything Outside the 5 Foot Building Line, Complete, Including Demolition, Capping Utilities, and Other Miscellaneous Site Improvements. (FY-04, LI 019315)				

NOTE NO. 1. To better facilitate the evaluation of prices, all pricing modifications are to be submitted on copies of the latest schedules as published in the solicitation or the latest amendment thereto on the Internet. The company name should be indicated on the face of the schedule to preclude being misplaced.

NOTE NO. 2. Offerors must insert a price on all numbered items of the Schedule. Failure to do so will disqualify the bid.

NOTE NO. 3. The field overhead costs through the contract duration are inclusive in the offered price for the contract, regardless of whether a compressed schedule is proposed.

NOTE NO. 4. COST LIMITATION:

a. The contract award for design and construction shall not exceed the following limitations (offerors are under no obligation to approach these amounts). This applies to Bid Items 01 through 03 only:

\$6,281,752.00

NOTE NO. 5. Technical Evaluation Proposal Rating Worksheet, Factor 12.2.4, Schedule, states that your proposed schedule will be evaluated more favorably if it indicates project completion prior to the Government indicated maximum duration. In addition to those submittals, indicate below your proposed contract completion period and intent of fast tracking. The contract completion days the offeror proposes will be made part of the contract and of which liquidated damages will apply.

Contract Performance Period _____ calendar days

Fast Tracking _____ Yes _____ No

CLAUSES INCORPORATED BY FULL TEXT

52.232-4001 COST LIMITATION – JUNE 1999

The contract award for design and construction shall not exceed \$6,281,752.00 for this project. Offerors are under no obligation to approach this amount.

(End of Clause)

NOTICE TO OFFERORS

1. HAND-CARRIED OR MAILED PROPOSALS:

All proposals must be clearly identified with the contractor's name and address. To ensure timely and proper handling, the lower left corner of the outermost wrapper must indicate the Request For Proposal No., Due Date of Proposal, Time by which Proposals are Due, and Title of Project.

The Government will not be responsible for proposals delivered to any location or to anyone other than those designated to receive proposals on its behalf as indicated below.

Proposals delivered by commercial carrier and those sent by U.S. Mail, including U.S. Express Mail, must be addressed as indicated below. Proposals shall not be addressed to any specific person.

U.S. Army Engineer District, Savannah
ATTN: CESAS-CT-C
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

Mailroom personnel on the first floor of 100 West Oglethorpe Avenue must receive proposals sent by U.S. Mail or delivered by commercial carrier by the time specified in Block 13 of the SF1442 for receipt of proposals.

Hand-carried proposals must also be delivered to mailroom personnel on the first floor of 100 West Oglethorpe Avenue by the time specified in Block 13 of SF1442 for receipt of proposals. Due to increased security requirements it is suggested that hand carried proposals be delivered 30 minutes prior to the specified time of receipt.

Offerors are cautioned that there is no parking in or around the building, and visitors must pass through security and sign in prior to being allowed access to the mailroom. Sufficient time must therefore be allowed when hand carrying proposals.

2. FACSIMILE MODIFICATIONS OF PROPOSALS ARE NOT AUTHORIZED.

3. QUALITY CONTROL SYSTEM (QCS)

Any contract award resulting from this solicitation will require the mandatory use of the automated Quality Control System. Please see section 01312A for additional information.

Section 00100 - Bidding Schedule/Instructions to Bidders

Section 00100**INSTRUCTIONS, CONDITIONS, AND NOTICE TO OFFERORS****SINGLE PHASE DESIGN-BUILD****1. PROPOSAL OVERVIEW.**

1.1 General. Inasmuch as the proposal will describe the capability of the Offeror to perform any resultant contract, as well as describe its understanding of the requirements of the Statement of Work, it should be specific and complete in every detail. The proposal should be prepared simply and economically, providing straightforward, concise delineation of capabilities to satisfactorily perform the contract being sought. The proposal should therefore be practical, legible, clear and coherent.

1.2 Proposal Submissions and the Design-Build Process. This process requires potential contractors to submit their performance, capability, technical and cost proposal information for review and consideration by the Government. The technical information contained in the proposal will be reviewed and evaluated by the Government in accordance with the evaluation criteria set out in this section. Cost information will not be rated during the technical review but will be evaluated in response to the funding limitations set out in Section 00010 – PRICE PROPOSAL SCHEDULE and other Offerors' price proposals.

1.3 Compliance Statement. The Offeror is required to certify that all items submitted in its proposal comply with the RFP requirements and any differences, deviations or exceptions have been identified and explained. Offerors are required to complete the statement and submit it with their technical proposal. Even if there are no differences, deviations or exceptions, the Offeror must submit the Compliance Statement and state that none exist.

Statement of Compliance

[Insert name of the offeror] hereby certifies that all items submitted in this proposal and final design documents (after contract award) comply with the solicitation requirements. The criteria specified in Request for Proposal No. DACA21-03-R-00XX are binding contract criteria and in case of any conflict after award, between DACA21-03-R-00XX and the contractor's proposal, the Request for Proposal criteria will govern unless there is a written and signed agreement between the contractor and the Government waiving a specific requirement. Should this proposal result in the award of a contract this statement will be included on each sheet of drawings and on the cover of the specifications.

1.4 Exceptions. Exceptions to the contractual terms and conditions of the solicitation (e.g., standard company terms and conditions) must not be included in the proposal.

2. PROPOSAL SUBMISSION INSTRUCTIONS.**2.1 Who May Submit.**

2.1.1 Proposals may be submitted by firms formally organized as design/build entities, or by design firms and construction contractors that have associated specifically for this project. In the latter case, a single design firm or construction contractor may offer more than one proposal by entering into more than one such association. For the purpose of this solicitation, no distinction is made between formally organized design-build entities and project-specific design-build associations. Both are referred to as the design-build offeror, (or simply "Offeror"), or the design/build contractor, (or simply "Contractor"), after award of a contract.

2.1.2 Any legally organized Offeror may submit a proposal.

2.2 Where to Submit. Submit proposal packages to the Savannah District at the address shown in Block 7 of Standard Form 1442.

2.3 Submission Deadline. Proposals must be received by the U.S. Army Corps of Engineers, Savannah District no later than the time and date specified in Block 13 of Standard Form 1442.

2.4 General Requirements.

2.4.1 In order to effectively and equitably evaluate all proposals, the Contracting Officer must receive information sufficiently detailed to allow review and evaluation by the Government.

2.4.2 Tabs. Organize and tab proposals as set forth in this section.

2.4.3 Size of Printed Matter Submissions.

2.4.3.1 Written materials must be on 8-1/2" x 11" paper.

2.4.3.2 Table of Contents. If more than one binder is used include the complete table of contents in each. Any materials submitted but not required by this solicitation, (such as company brochures), may be placed in Appendices.

2.4.3.3 Number of Copies. Submit six (6) hard copies of the Proposal.

2.4.3.4 Drawing sheets.

2.4.3.4.1 Submit one set of full size drawings size A1 (approximately 24" x 36").

2.4.3.4.2 Submit six half-size sheets size A2 (approximately 16" x 23").

2.4.3.4.3 Drawings will be bound.

2.4.3.4.4 Drawings submitted for the proposal may be done with any CAD software available to the Offeror. However, the drawings for 60% and Final design submittals will be done and submitted in the latest version of Microstation format only. Conversions from AutoCAD are discouraged because of file incompatibility and the added work necessary for the conversion.

2.4.4 Electronic Copy of Submissions. In addition to the hard copies required above, all Offerors will submit their complete submittal on a CD-ROM. Submit technical and cost proposals on separate CD ROM disks. Written portions of the proposal should be in MS Word, Adobe Acrobat PDF, or WordPerfect format. The electronic version should be either a single file tabbed in the same order as the hard copy or multiple files hyperlinked to a single table of contents. Drawings should be in one of the following formats: Microstation DGN, Adobe Acrobat PDF, Max View CAL (with Sendable INDEX.SVD), or Auto Cad DWG. Any portion of the proposal not available in electronic format, i.e. cut sheets, should be scanned in Adobe Acrobat PDF format. The CD ROM must be clearly labeled by solicitation number, project name, installation, and Offeror's name.

2.5 Submission Format.

2.5.1 PROPOSAL, VOLUME I – Contract Requirements & Price Proposal

2.5.1 Submit original and one (1) copy of VOLUME I - Contract Requirements & Price Proposal. This information should be submitted in separate three-ring binders labeled "Contract Requirements & Price Proposal."

2.5.2 Volume I – CONTRACT REQUIREMENTS & PRICE PROPOSAL. Organized as follows:

VOLUME I - Contract Requirements & Price Proposal

TAB A – Standard Form 1442, completed and signed by an authorized person from the company or team.

TAB B – Proposal Schedule “Supplies or Services Price/Cost”

TAB C – Bid Bond

TAB D – Section 00600 – Representations and Certifications.

TAB E – Financial Information (e.g. latest financial statement, annual reports, Dun & Bradstreet Ratings, and or number, etc.)

TAB F – Statement of Compliance (See paragraph 1.3)

2.5.3 PROPOSAL VOLUME II – Technical information.

2.5.3.1 Number of copies. Submit six (6) copies of VOLUME II of their Phase 2 Proposal and six (6) half-size copies of all drawings and one (1) full-size copy of all drawings.

2.5.3.2 Submit this information in separate three-ring binders labeled "Technical Information." This category includes design documents, drawings, sketches, outline specifications, design analysis, catalog cuts, and other information.

2.5.3.3. VOLUME II – TECHNICAL INFORMATION. Organized and tabbed as follows:

VOLUME II – TECHNICAL INFORMATION

TAB A – BETTERMENTS.

TAB B – FACTOR 1: BUILDING FUNCTION AND AESTHETICS.

TAB C - FACTOR 2: OFFEROR PAST PERFORMANCE INFORMATION (PAST PERFORMANCE INFORMATION SHEETS).

TAB D - FACTOR 3: TECHNICAL APPROACH NARRATIVE.

TAB E - FACTOR 4: CORPORATE RELEVANT SPECIALIZED EXPERIENCE (CORPORATE RELEVANT SPECIALIZED EXPERIENCE SHEETS (EXAMPLE PROJECTS)).

TAB F – FACTOR 5: SUSTAINABLE DESIGN SUBMITTAL REQUIREMENTS.

TAB G - FACTOR 6: FURNISHINGS SUBMITTAL REQUIREMENTS.

TAB H – FACTOR 7: SITE DESIGN SUBMITTAL REQUIREMENTS.**TAB I – FACTOR 8: BUILDING SYSTEMS SUBMITTAL REQUIREMENTS.****TAB J - FACTOR 9: PROJECT MANAGEMENT PLANS and SCHEDULES.**

TAB K - Any other information provided by the Offeror.

DRAWINGS (Minimum drawings required are outlined in each section)

2.6 The technical data described in Paragraphs 3 through 12 below shall be submitted as part of the formal proposal. Graphically describe all alternate designs on separate drawings from the basic proposal. Be advised that the required data listed below will be utilized for technical review and evaluation and used for determination of a "Quality Rating" by a Technical Evaluation Team. Materials indicated in the design/construction criteria, but not indicated in the Offeror's specifications, will be assumed to be included and a part of the proposal.

2.7 Incomplete proposals. Failure to submit all the data indicated may cause the Proposal to be deemed incomplete. In that case the proposal will not be considered for technical evaluation or for subsequent award.

3. TAB A – BETTERMENTS

3.1 Definition of Betterments. "Betterment" is defined as any component or system, which meets and exceeds the minimum requirements, stated in the Request for Proposal. This includes all proposed betterments listed in accordance with the "Proposal Submission Requirements" of this TAB.

3.2 During discussions, the Government may request that betterments be removed from the Offeror's proposal in order to reduce costs.

3.3 The minimum requirements of the contract are identified in the Request for Proposal. All betterments offered in the proposal become a requirement of the awarded contract.

3.4 Submission of Betterments. The Offeror will identify "Betterments" in the following manner:

3.4.1 Short descriptive title of the betterment and how it exceeds RFP requirements.

3.4.2 Narrative of the proposed betterment and rationale as to why it has been included.

3.4.3 Reference in the Offeror's proposal where the betterment is shown or specified.

3.4.4 Estimated value of the betterment.

4. TAB B – FACTOR 1: BUILDING FUNCTION AND AESTHETICS

4.1 Architectural Narrative. State the proposed image or design theme of this proposal. Describe interior design theme. Describe any special features or finishes that contribute to the proposed design theme. Describe construction of typical interior partitions. List all architectural deviations included in the proposal.

4.2 Certifications.

4.2.1 “U” Value Certification. Provide signed and dated certification that the final design shall meet "U" values required in the RFP for each exterior wall assembly and roof assemblies.

4.2.2 Mechanical Room Certification. Provide signed and dated certification that the mechanical room is of sufficient size to accommodate and serve all mechanical equipment shown and specified by the mechanical design.

4.3 List of Specifications. Provide a list of titles of specifications proposed to use in the design. It is not necessary to include sections required in this RFP.

4.4 Architectural Drawings. Drawings shall be provided in sufficient detail for reviewers to visualize how the designer has interpreted the RFP functional and operational requirements in his proposal. Drawings shall include, but not be limited to, the following:

4.4.1 Floor Plan(s). Floor plans for each floor shall be drawn accurately to scale and shall be shown at 1/8" = 1'-0" minimum scale unless otherwise noted. Label all spaces. Indicate net area of all spaces. Show all doors, windows, plumbing fixtures, toilet partitions and built-in casework. Show required workstations as dashed-line blocks to demonstrate that the spaces accommodate the required workstations. Show overall building dimensions. If the floor plan(s) must be drawn in segments in order to comply with the requirements on the proper scale, provide a separate 1/16" = 1'-0" or smaller scale composite floor plan showing exterior walls, interior partitions, circulation elements and cross referencing for enlarged floor plans.

4.4.2 Area Tabulations. Show gross floor area tabulations on the same plate as the floor plan.

4.4.3 Building Elevations. Exterior elevations shall be drawn to 1/8" = 1'-0" scale for all four major building elevations. If elevations must be drawn in segments in order to comply with the requirements on proper scale, provide separate 1/16" = 1'-0" or smaller composite elevations as required to fit on one sheet. Elevations shall show all windows, doors, canopies, and platforms. All building exterior materials and roof pitches shall be noted clearly.

4.4.4 Typical Wall Section. Provide one exterior wall section indicating the predominant exterior wall and wall/roof intersection condition. Show overall wall thickness and eave height. Note all materials. Wall section shall be unbroken where practical and drawn at 3/4" = 1'-0" scale.

4.4.5 Roof Plan. Roof plans for each building shall be drawn accurately to scale and shall be shown at least 1/16" = 1'-0" minimum scale unless otherwise noted. All roof slopes shall be indicated.

4.4.6 Room Finish Schedule. Provide a room finish schedule indicating the following for all spaces: floor, wall base, wainscot, wall and ceiling finishes; wainscot height, wall base height and ceiling height.

5. TAB C - FACTOR 2: OFFEROR PAST PERFORMANCE INFORMATION.

5.1 A sample Past Performance Evaluation Questionnaire is included at the end of this section. The offeror will identify three substantially complete projects with a minimum value of \$2,000,000 to be used for reference and evaluation purposes and provide a questionnaire to the Point of Contact for each project listed for completion. When completed, these forms will be mailed or e-mailed to the Savannah District Contract Specialist identified in the sample transmittal letter provided. It is the Offeror's responsibility to ensure that the reference documentation is provided. The Government may not make additional requests for past performance information from the references. Copies of the evaluation form will be provided to the Savannah District directly from the reference. Projects from

which questionnaires are received will have been completed within five years of the date of the solicitation. The Government may contact sources other than those provided by the Offeror for information with respect to past performance. These other sources may include CCASS (Construction Contractor Appraisal Support System), ACASS (Architect-Engineer Contractor Appraisal Support System), telephone interviews with organizations familiar with the Offeror's performance, and Government personnel with personal knowledge of the Offeror's performance capability. The experience of individuals will not be credited under this factor but will be evaluated under FACTOR 9.a. KEY PERSONNEL.

5.2 If the Offeror is made up of separate design and construction companies that have combined for this project, then this item must be completed twice (once for each company), for a total of six projects.

5.3 Identify by project your three (3) most recently completed projects listing the contract award amount and the final contract amount using the Proposal Data Sheet attachment A.

5.4 Using the Proposal Data Sheet contained in attachment A identify all violations of the Occupational Safety and Health Act (OSHA) regulation CFR 29 Part 1910 Occupational Safety and Health Standards in the past five years. Include all supporting documentation including details of violation, status, resolution and amount of fine if applicable. If the Offeror had no OSHA violations within the past five years make the following statement "Offeror had no OSHA violations in the past five years".

6. TAB D - FACTOR 3: TECHNICAL APPROACH NARRATIVE.

6.1 Describe in general terms how the Offeror will approach the design and construction of these facilities. The Technical Approach Narrative shall be limited to a maximum of twenty (20), double-spaced typed pages, using a 12-pitch font. At a minimum, the narrative should address the following:

6.1.1 Demonstrate a suitable understanding of the process to be able to adequately address and anticipate the risks associated with Design/Build processes.

6.1.2 Address the roles and responsibilities of the various sub-contractors for both design and construction.

6.1.3 Describe how the Offeror will restart/continue the design phase of the project and incorporate User comments and reviews into the process.

6.1.4 Briefly discuss the Offeror's Design Quality Control Program.

6.1.5 Describe the design team's involvement throughout the construction period.

6.1.6 Describe how the Offeror integrates construction subcontractors into the design process.

6.1.7 Describe the Offeror's procedures for handling construction and design problems.

6.1.8 Describe Offeror's implementation plans to utilize "fast track" procedures on this project whereby preliminary site construction activities can begin prior to 100% completion of the design documents.

6.2 CAUTION: This narrative may not exceed twenty (20) pages and that the Government review staff will review and evaluate only the information contained on the twenty pages in this section.

7. TAB E - FACTOR 4: CORPORATE RELEVANT SPECIALIZED EXPERIENCE.

7.1 Provide examples (at least three) of projects for which the Offeror has been responsible. The examples should be as similar as possible to this solicitation in project type and scope. For this solicitation similar projects should reflect one or more of the following features:

7.1.1 Design and/or construction of a single building with a floor plan of 20,000 square feet or greater.

7.1.2 Design and/or construction of a single project with a value of \$4.0 Million or greater.

7.1.3 Design and/or construction of a church, synagogue, chapel, or other facility with similar features. These features include large clear roof spans - greater than 50 feet - other than warehouses - and the design, selection and installation of built-in furniture such as pews, lecterns, podiums, etc.

7.2 Provide references with contact names and telephone numbers for all examples cited. Each example should indicate the general character, scope, location, cost, and date of completion of the project. If the offeror represents the combining of two or more companies for the purpose of this RFP, each company should list project examples. Example projects must have been substantially completed within five years prior to the date of the solicitation. The experience of individuals will not be credited under this factor but will be evaluated under FACTOR 9.a. KEY PERSONNEL.

8. TAB F – FACTOR 5: SUSTAINABLE DESIGN SUBMITTAL REQUIREMENTS.

8.1 SPIRIT Summary Table. Submit Appendix H of Section 01010 DESIGN REQUIREMENTS, “SPIRIT Requirements and Summary Table” with the “Proposal Points” column filled in to reflect the points contained in your proposal, including the total. A “SPIRIT Requirements and Summary Table” shall be provided for each individual occupied building type in project. The requirement is to achieve a minimum of 35 points with a goal of achieving at least 50 points in each summary table using the SPIRIT Project Rating Tool for Sustainable Design. NOTE: The points indicated on this summary will be considered contract requirements upon award. Do not modify any of the spaces in this column that were filled in on the solicitation.

8.2 Sustainable Design Narrative. Organize the narrative in the same order as SPIRIT summary table with one paragraph devoted to each proposed item on the chart. Briefly describe the activities and/or features proposed to earn each point indicated on your proposal. For mandatory points and requirements the narrative may be limited to repeating the statement found in the “Remarks” column of the SPIRIT summary table.

9. TAB G - FACTOR 6: FURNISHINGS

9.1 Interior Design Narrative. The furnishings narrative must outline the general features and approach to the interior finishes, fixtures, and furniture selection for the chapel. Quality level of finishes are more important to evaluators than specific selections.

9.2 Interior Design Coordination and User Approvals. Narrative must address the methodology of how final finishes will be selected, coordinated throughout the facility, and approved by the user. Specifically when in the design process the decisions will be made and approved by the user.

9.3 Catalog Cuts. Brief description of various items of furnishings, including catalog cuts. Manufacturers, level of quality, finish, color selections, warranties, etc. are more important to the evaluators than selections of specific sizes or capacities.

9.4 As a minimum, all furnishings identified in Appendix K – ARMY CHAPEL STANDARD DEFINITIVE DESIGN, paragraph 5.2 shall be submitted in the Offeror's proposal.

10. TAB H – FACTOR 7: SITE DESIGN SUBMITTAL REQUIREMENTS. The site design portion of the proposal must outline the proposed site demolition, layout, grading, storm drainage, and erosion control practices of design and construction. The proposal shall include the following:

10.1 General Site Development Narrative. State the purpose, functional layout of all major structures in relation to parking and access drives, the extent of grading and drainage system, as well as erosion control measures in sufficient detail to delineate and characterize functional features and the desired image or visual appearance of this project. The narrative shall reflect setbacks requirements as indicated in Section 01020, as well as the visual characteristics of the surrounding topography. Include a statement addressing Force Protection Compliance, as well as a statement addressing Storm Water Management such that post development runoff does not exceed pre development runoff flows. Also include a statement of any requirements for traffic control signals and signage plans. Provide a brief statement of the exterior construction materials to be used in the project.

10.2 Erosion Control Narrative. Provide a narrative of the erosion control measures to be used in this project.

10.3 Landscape Narrative. The landscape design narrative shall include an analysis of existing site conditions, including an indication of existing trees and plant materials that are to be saved and remain on the project site. The narrative shall indicate specific site problems related to proposed development and the rationale for proposed plant selection and locations. The narrative shall also include a list of suggested types and sizes of plant materials to be used (use native plants as much as possible). It shall also discuss type of irrigation to be provided, type, quantity and location of site furniture, per Fort Benning Installation Design Guide's (IDG). The narrative shall discuss what materials are being included in the project that comes from recycled materials and renewable resources. It shall also indicate coordination with AT/FP requirements.

10.4 Site Utilities Narrative. Design Narrative shall include Description of the utility systems chosen.

10.5 Design Calculations. Submit calculations for the following:

10.5.1 Storm drainage pipe design calculations shall not be required for the proposal submittal. Storm drainage pipe design calculations for the final design submittal shall show that the pipes are adequately sized using the Rational Method in accordance with technical instructions.

10.5.2 Storm water detention pond calculation shall show that the pond is adequately sized such that post development runoff does not exceed pre-development runoff in accordance with Fort Benning Installation Design Guide requirements. Storm water detention can be designed as an underground system.

10.6 Outline Specifications. Provide a list of titles of specifications proposed for use in the design, if the section is not provided in this RFP.

10.7 Site Development Drawings. Drawings shall be shown at 1 in = 30ft scale (or 1:400 in metric units). All drawings shall have a Legend, North Arrow, and graphic bar scales. Drawings shall be provided in sufficient detail and annotated so that Government may visualize how the designer has interpreted the user's functional and operational requirements in his proposal for final design. Drawings shall include, the following:

10.7.1 Demolition Plan and Tree Removal Plan. The demolition plan shall also show the limits of tree removal.

10.7.2 Layout Plan. This plan should show the building layout in relation to parking areas, access drives, and pedestrian walkways. This plan should show overall dimensions of parking lots, minimum building setbacks (in compliance with Force Protection), minimum setback from Streets or Roads, utility pad locations (this includes dumpster, electrical and mechanical equipment pads). The Layout Plan will also show location of sidewalks, access drives, retaining walls, fencing, site steps, service vehicle drives, pedestrian bridges, handicap parking spaces, and curb and gutter. The use of patterning shall be required to distinguish between concrete pavement and bituminous asphalt pavement. The submitted layout plan shall also show dimensions of major items such as building, parking lot rather than coordinates of corner points.

10.7.3 Grading and Drainage Plan. This Plan should show contour elevations at 1-foot (250mm) minimum interval and critical spot elevations, as well as finish floor elevations. This plan should also show the locations of storm inlets, curb inlets, manholes, storm drainage pipes, culverts, headwalls, storm water control structure, detention pond area, and drainage ditches. Drainage ditches shall be kept to a minimum due to the highly erodable soil. Curb cuts for drainage of parking lots and access drives are prohibited.

10.7.4 Landscape Design Plan. This plan shall include existing trees and under story to be saved, new trees to be planted, screens, buffers, lawns, and mulched area for the project. Both large shade trees and small under story and ornamental trees shall be shown. Plant labels shall be provided for the plans. Also to be provided is a drawing at a larger scale of the building entrance of the project site to indicate the Landscape Architect's ideas or intent for a more detailed planting plan as used in foundation plantings including plant labels.

10.7.5 Site Utility Plan. Indicate locations of outside utilities where required to support the project. Show same scale as other site work drawings. The plan shall include a general utility layout with connection points, valve fittings and requirements for pneumatic ejector, sewage pumps and sump pumps and the relative placement of water and sanitary sewer systems. The layout plans should take into account the ease of maintenance and utility corridors.

10.8 Electronic topographic survey files. Upon request, a topographic survey in English units in a .dgn format will be provided to Offerors.

11. TAB I – FACTOR 8: BUILDING SYSTEMS

11.1. STRUCTURAL SUBMITTAL REQUIREMENTS. The structural portion of the proposal must outline the proposed methods and materials of design and construction. The submittal shall include the following:

11.1.1 Structural Narrative. Provide a general description of the scope of the project and all of the major structures. Give overall building dimensions and a description of the principal features such as wall and roof construction proposed. If the building is irregularly shaped, explain where seismic joints will be placed to create regular shapes or provide a statement that a dynamic analysis of the building will be performed.

11.1.1.1 Provide a description of the framing system chosen.

11.1.1.2 Provide a description of the lateral load resisting system and how these loads will be transmitted to the foundations.

11.1.1.3 Provide a description of the anticipated foundations based on information provided in the RFP.

11.1.1.4 Provide a list of special design features including features to be used in compliance with the AT/FP requirements.

11.1.2 Fire Resistance Statement. State the required fire resistance criteria for all portions of the structural system and the proposed method of meeting these requirements.

11.1.3 Design Analysis. State the live loads for which the facility is to be designed. Include roof and floor loads. Provide the wind loads, lateral earth pressure loads, seismic loads, etc. as applicable. Complete analysis is not necessary, only tabulation of loads is required.

11.1.4 Outline Specifications. The Offeror shall provide a list of titles of specifications he proposes to use in the design, if sections are not provided in this RFP.

11.2 MECHANICAL SUBMITTAL REQUIREMENTS.

11.2.1 Heating, Ventilating, and Air Conditioning Narrative. Narrative of design analysis will contain the following:

11.2.1.1 Design conditions used in calculations - inside and outside temperatures, personnel load, outside air or ventilation requirements, U-factors, and other special conditions.

11.2.1.2 Block loads for heating and cooling shall be calculated using ASHRAE-based methods. Where passive solar applications prove feasible and cost effective, the Offeror shall employ a load calculation method that can incorporate all applicable passive solar factors. All load calculation software must be traditionally used by the industry.

11.2.1.3 A description of all HVAC systems to be considered in a life cycle cost analysis (LCCA). A LCCA, using the program LCCID, of each of the HVAC systems described shall be submitted by the successful contractor – after contract award – verifying that the system selected for the building is the most efficient and is within the energy budget.

11.2.1.4. A description of piping systems including type of pipe, insulation requirements, and whether concealed or exposed, including catalog cuts.

11.2.1.5 Energy Budget Certification. Provide a certification that the final design will comply with Energy Budget requirements of specification Section 01020.

11.2.1.6 Controls System Narrative. A description of the proposed Direct Digital Controls System to be used.

11.2.1.7 Catalog Cuts. Brief description of various items of equipment, including catalog cuts. Manufacturers, level of quality, warranties, etc. are more important to the evaluators than selections of specific sizes or capacities.

11.2.1.8 Specifications. List of specifications to be used.

11.2.2 Plumbing Narrative.

11.2.2.1 Plumbing Analysis. Plumbing analysis to determine number of fixture units, cold and hot water capacity requirements, and equipment or capacities of miscellaneous and special systems.

11.2.2.2 Fixture determination listing quantity and type of fixtures for both men's and women's toilets, and other fixtures such as drinking water fountains, service sinks, etc.

11.2.2.3 Description of domestic water heating and storage equipment, including capacity, type (gas, electric, boiler, water), materials, and insulation.

11.2.2.4 Piping types and location (concealed or exposed), together with material proposed and insulation requirements.

11.2.2.4. Brief description of miscellaneous systems such as compressed air (capacity, pressure, piping, location of air outlets, etc.), roof drainage, natural gas (pressure, quantity, and equipment to be served), and other special systems.

11.2.2.5 Catalog Cuts. Brief description of various items of equipment, including catalog cuts. Manufacturers, level of quality, warranties, etc. are more important to the evaluators than selections of specific sizes or capacities.

11.2.2.6 Specifications. The proposer shall provide a list of titles of specifications he proposes to use in the design, if section not provided in this RFP.

11.2.3 Mechanical Drawings. Provide plan view showing the following:

11.2.3.1 Heating, Ventilating, and Air Conditioning Drawings. Heating, ventilating, and air conditioning equipment layout - chillers or refrigeration compressors, boilers, pumps, condensers or cooling tower, air handling units, fans, hoods, and other items of major equipment required for the facility.

11.2.3.2 Plumbing Drawings. Plumbing fixture layout, floor and area drains, and plumbing equipment layout (hot water generator, storage tank, air compressors, etc.).

11.2.3.3 Mechanical Room(s) Drawings. Provide a 1/4 inch = 1 foot scale (1:50) plan showing equipment layout of major components in mechanical rooms. The Engineer/ Architect of record will be required to certify that adequate space has been provided for safe operation of equipment and maintenance capability. Mechanical equipment layouts shall comply with Section 01020.

11.3 ELECTRICAL DESIGN SUBMITTAL REQUIREMENTS.

11.3.1 Interior Electrical System Design Narrative. Provide an overview of the interior electrical design describing the major features of the power, lighting, communication and security systems.

11.3.2 Interior Lighting System. Provide an Interior Concept Lighting Schedule tabulating room names, fixture types, lighting intensities, and basis of design (e.g., IES criteria, RFP requirement). The schedule shall include but not be limited to the following typical areas:

11.3.2.1 Chapel Building. Building Exterior, Laundry Room, Communications Room, Corridors, and Barracks Typical Module (Clothes Closet, Bathroom, Living/Sleeping Area, Kitchen/Dining Area and Interior Corridor).

11.3.2.2 Religious Education Center Addition. Building Exterior, Open Office, Private Office, Executive Office, Corridor, Lobby, Conference Room, Cell, Aerobics Room, Evidence Room, Physical Conditioning Room, Locker Room, Classroom and Sullivan Room.

11.3.3 Interior Electrical Distribution. For typical areas within the various buildings, describe the type of power and communication wiring systems proposed (e.g., cable tray, rigid metallic conduit, rigid nonmetallic conduit, electrical metallic tubing, nonmetallic-sheathed cable).

11.3.4 Interior Lighting Fixture Catalog Cuts. Provide a single catalog cut sheet for each fixture type. This cut sheet shall be correlated to the Concept Lighting Schedule and shall establish the aesthetic, physical, functional and photometric characteristics of the fixture and shall establish a level of quality. Manufacturers, level of quality, warranties, etc. are more important to the evaluators than selections of specific sizes or capacities.

11.3.5 Exterior Electrical Distribution System Design Narrative. Provide an overview of the exterior electrical design describing the major features of the power, lighting and communication systems.

11.3.6 Exterior Lighting System. Provide an Exterior Concept Lighting Schedule tabulating areas (e.g., roadway, walkway, parking, security), fixture types, pole heights, lighting intensities, and basis of design (e.g., IES criteria, RFP requirement).

11.3.7 Exterior Lighting Fixture Catalog Cuts. Provide a single catalog cut sheet for each fixture type and pole. This cut sheet shall be correlated to the Exterior Concept Lighting Schedule and shall establish the aesthetic, physical, functional and photometric characteristics of the fixture and shall establish a level of quality.

11.3.8 Exterior Electrical Equipment Catalog Cuts. Provide catalog cuts of electrical distribution equipment. Manufacturers, level of quality, warranties, etc. are more important to the evaluators than selections of specific sizes or capacities.

11.3.9 Exterior Electrical Drawings. Provide a separate electrical site plan indicating all existing to be removed, existing to remain, and new utility lines and equipment required to serve the project. Utility lines shown shall include electrical power lines, telephone and other communication lines. The plan shall also show all buildings, trees, roads and driveways, parking areas, and any other items necessary for functional and operating adequacy. Indicate the connection points and the approximate routing of lines through the site. Indicate the locations of transformers, switches and cable termination cabinets. Also indicate on the drawings the lighting fixture type proposed within each area (no layout is required).

11.3.12 Specifications. Provide a list of specifications proposed for use in the design but not included in the RFP.

11.4 FIRE PROTECTION DESIGN SUBMITTAL REQUIREMENTS.

11.4.1. Fire Protection Narrative. A narrative will be provided addressing the following items for each building type in this project:

11.4.1.1 Automatic fire extinguishing systems and hose standpipe systems: Identification of all areas provided with sprinkler protection and the type of sprinkler system provided, sprinkler hazard classification for these areas, areas protected by other automatic suppression systems and the type system provided, and buildings provided with hose standpipe systems and the type of standpipe system provided and indication if a fire pump is required and where the pump will be located.

11.4.1.2 The type of alarm and detection system, location of the fire alarm and detection equipment including fire alarm control panel, and catalog data sheets of major components. Manufacturers, level of quality, warranties, etc. are more important to the evaluators than selections of specific sizes or capacities.

11.4.2 Life Safety Certification. Provide certification by the fire protection engineer that the building design shall comply with the life safety/fire protection provisions of the applicable criteria indicated in the RFP.

11.4.3 Credentials of Fire Protection Engineer. Provide the credentials of the fire protection engineer in the proposal submittal. The design of the fire protection features shall be by a qualified fire protection engineer meeting one of the following conditions: a.) An engineer with a Bachelor of Science or Masters of Science Degree in fire protection engineering from an accredited university engineering program, plus a minimum of 5 years' work experience in fire protection engineering. b.) A registered professional engineer who has passed the National Council of Examiners for Engineering and Surveys (NCEE) fire protection engineering written examination. c.) A registered P.E. in a related engineering discipline with a minimum of 5 years' experience dedicated to fire protection engineering.

11.4.4 Specifications. Provide a list of all UFGS guide specifications to be used.

12. TAB J - FACTOR 9: PROJECT MANAGEMENT PLANS AND SCHEDULES. The Offeror shall provide a Management Plan. This is an overall plan showing how the Offeror will control the design and construction of the project. The term "management plan" is defined as a plan that includes the following subplans:

12.1 Key Personnel.

12.1.1 Provide the names, resumes, and levels of responsibility of the principal managers and technical personnel who will be directly responsible for the day-to-day design and construction activities. Include, as a minimum the following:

52	Project Manager
53	Project Architect
54	Construction Manager
55	Construction Quality Control Manager
56	Design Quality Control Manager

12.1.2 Indicate whether each individual has had a significant part in any of the project examples cited. If reassignment of personnel is considered possible, provide the names and resumes of the alternative professionals in each assignment.

12.1.3 Provide a narrative and/or diagram that outlines the relationships and interaction between each of the key personnel above.

12.2 Schedule.

12.2.1 The Offeror shall clearly state the total performance period proposed from the contract Notice to Proceed to turn-over of the facility for use by the end user's unrestricted use. This period shall be inclusive of all review period required by the Government and specified in Section 01330 SUBMITTAL PROCEDURES

12.2.2 The Government's requirement is that all design and construction on this project be completed within 600 days of Notice to Proceed, inclusive of all review periods and Government phasing requirements specified. The Offeror may propose a completion period of lesser duration. Completion periods of significantly lesser duration may be rated as more advantageous to the Government. If the Offeror proposes a completion period of lesser duration than the Government requirement, the following statement shall be completed and submitted:

Statement of Compliance

[Insert name of the Offeror] hereby proposes that the period of performance for all design and construction is _____ calendar days from Notice to Proceed, inclusive of Government review periods and Government phasing requirements specified.

[Insert name of the Offeror] hereby certifies that the offer of this performance period is at no additional cost to the Government over the performance period specified as the minimum Government requirements.

12.2.2 Integrated Design and Construction Schedule. Submit an Integrated Design and Construction Schedule with all areas clearly identified. The schedule for design and construction shall be task oriented, indicating dates by which milestones are to be achieved. The Offeror may use a critical path or other method of his/her choice; however, the schedules shall be graphically represented.

12.2.3 The Offeror shall also submit a narrative explaining how the schedules will be achieved.

12.2.4 A schedule that significantly improves on the Government supplied maximum duration will be considered more favorably during evaluations.

12.3 Small and Small Disadvantaged Business Utilization.

12.3.1 ALL OFFERORS are required to provide a narrative discussion of their plan for utilization of small and small disadvantaged businesses. At a minimum, the narrative shall discuss:

12.3.1.1 Goals for subcontracting with small and small disadvantaged businesses in sufficient detail to allow Government evaluators to determine that these goals are realistic, justifiable, positive, and in accordance with the Government's policy to maximize opportunities for these types of businesses.

12.3.1.2 The extent to which small disadvantaged businesses, and where appropriate, historically black colleges and universities/minority institutions (HBCU/MI) have been identified for participation as part of the Offeror's team.

12.3.1.3 The Offeror's past and present commitment to providing subcontracting opportunities and encouragement to small and small disadvantaged businesses.

12.3.2 Subcontracting Targets. For Offerors information the following are the U.S. Army Corps of Engineers Subcontracting Targets for FY03:

12.3.2.1 57.2% of planned subcontracting dollars placed with Small business concerns

12.3.2.2 8.9% of planned subcontracting dollars placed with Small Disadvantaged business concerns

12.3.2.3 3% of planned subcontracting dollars placed with HubZone small business concerns

12.3.2.4 8.1% of planned subcontracting dollars placed with Women owned small business concerns

12.3.2.5 3% of planned subcontracting dollars placed with Service-Disabled Veteran-owned small business concerns

13. PROPOSAL EVALUATION

13.1 The Evaluation Team will evaluate each proposal individually using the qualitative/quantitative procedures which follow. Each proposal will be reviewed and rated by each of the evaluators. During this process, discrepancies between evaluations will be discussed and resolved within the team. Following the completion of the individual evaluations, a consensus evaluation will be derived. The results of this consensus evaluation will be used to set the competitive range for the purposes of discussions and as the basis for the best value decision by the Contracting Officer / Source Selection Authority.

13.2 Proposals which reach the evaluation stage have passed an initial Contracting Division review to assure that they are complete and responsive. All proposals which are provided to the evaluation team will be evaluated and rated.

13.3 Past Performance Questionnaires. Each Offeror has been requested to have at least three questionnaires from previous projects completed and forwarded directly to the Savannah District for use by the evaluation team in past performance evaluation and risk analysis. The Government may contact the points of contact indicated on these questionnaires for additional information and to assure validity of the information received. The Government may contact sources other than those provided by the Offeror for information with respect to past performance. These other sources may include ACASS (Architect-Engineer Contract Administration Support System), CCASS (Construction Contractor Appraisal Support System), telephone interviews, and Government personnel with personal knowledge of the Offeror's performance capability. If more than three questionnaires are returned, the evaluation team shall evaluate all questionnaires. If less than three questionnaires are returned, the proposal shall receive a rating commensurate with the contractor's performance risk as determined by the evaluation team.

14. INDIVIDUAL PROPOSAL RATING WORKSHEETS

14.1 Worksheets are provided on the following pages that the evaluators will use to review and rate the individual proposals.

14.2 Comments are required to support all ratings.

15. RATING METHODOLOGY

15.1 Proposals will be evaluated in each Evaluation Factor based on the following rating scheme:

<u>RATING</u>	<u>EXPLANATION</u>
Outstanding/Very Low Performance Risk	Based on the Offeror's Submittal, no doubt exists that the Offeror can successfully perform the required work.
Above Average/Low Performance Risk	Based on the Offeror's Submittal, little doubt exists that the Offeror can successfully perform the required work .
Satisfactory/Moderate Performance Risk	Based on the Offeror's Submittal, some doubt exists that the Offeror can successfully perform the required work. Normal contractor effort should preclude any problems.
Marginal/High Performance Risk	Based on the Offeror's Submittal, substantial doubt exists that the Offeror can successfully perform the required work.
Unsatisfactory/Unacceptable Performance Risk	Based on the Offeror's Submittal, extreme doubt exists that the Offeror can successfully perform the required work.

15.2 OUTSTANDING: Information submitted in the proposal demonstrates the Offeror's potential to significantly exceed performance or capability standards identified in the solicitation. The Offeror has clearly demonstrated an understanding of all aspects of the requirements to the extent that timely and highest quality performance is anticipated and risk to the Government is very low. The Offeror has convincingly demonstrated that the RFP requirements have been analyzed, evaluated, and synthesized into approaches, plans, and techniques that, when implemented, should result in outstanding, effective, efficient, and economical performance under the contract. An assigned rating of "outstanding" indicates that, in terms of the specific factor or subfactor, the submittal contains essentially no significant weaknesses, deficiencies or disadvantages. The proposal has exceptional strengths that will significantly benefit the Government. The proposal exceeds an "Above Average" rating. **The proposal significantly exceeds most or all solicitation requirements. The proposal presents very low risk to the Government.**

15.3 ABOVE AVERAGE - Information submitted in the proposal demonstrates the Offeror's potential to exceed performance or capability standards. The proposal has one or more strengths that will benefit the Government. The areas in which the Offeror exceeds the requirements are anticipated to result in a high level of efficiency or productivity or quality. An assigned rating within "Above Average" indicates that, in terms of the specific factor or subfactor, any deficiencies noted are of a minor nature that should not seriously affect the Offeror's performance. The submittal demonstrates that the requirements of the RFP are well understood and the approach will likely result in a high quality of performance which represents low risk to the Government. A rating of "Above Average" is used when there are no indications of exceptional features or innovations that could prove to be beneficial, or conversely, weaknesses that could diminish the quality of the effort or increase the risk of failure. Disadvantages are minimal. The submittal contains excellent features that will likely produce results very beneficial to the Government. Response exceeds a "Satisfactory" rating. **The proposal fully meets all RFP requirements and significantly exceeds many of the RFP requirements. The proposal presents low risk to the Government.**

15.4 SATISFACTORY - Information submitted in the proposal demonstrates the Offeror's potential to meet performance or capability standards. The proposal presents an acceptable solution to the Government's requirements. The proposal meets minimum RFP requirements. Few or no advantages or strengths are presented. The Offeror's proposal contains weaknesses in several areas that are not offset by strengths in other areas. Complete and comprehensive proposal; exemplifies an understanding of the scope and depth of the task requirements and the Offeror's understanding of the Government's requirements. A rating of "Satisfactory" indicates that, in terms of the specific factor or subfactor, there is sufficient confidence that a fully compliant level of performance will be achieved with moderate risk to the Government. Response exceeds a "Marginal" rating. **No significant advantages or disadvantages. The proposal presents moderate risk to the Government.**

15.5 MARGINAL - Information submitted in the proposal demonstrates the Offeror's potential to marginally meet performance or capability standards necessary for minimal, but still acceptable contract performance. The proposal is not adequately responsive or does not address the specific factor(s) (or subfactor(s)). The Offeror's interpretation of the Government's requirements is so superficial, incomplete, vague, incompatible, incomprehensible, or incorrect as to be unacceptable. The assignment of a rating of "Marginal" indicates that the evaluator feels that mandatory corrective action would be required to prevent significant deficiencies from affecting the overall project. The Offeror's qualifications demonstrate an acceptable understanding of the requirements of the RFP and the approach will likely result in an adequate quality of performance, which represents a high level of risk to the Government. Low probability of success, although the proposal has a reasonable chance of becoming at least acceptable. Response exceeds an "Unsatisfactory" rating. **Significant disadvantages. Substantial doubt exists that the Offeror can successfully perform the required effort. The proposal presents high risk to the Government.**

15.6 UNSATISFACTORY - The proposal fails to demonstrate that it meets performance or capability standards required in the RFP. The proposal is unacceptable. Requirements can only be met with major changes to the proposal. The proposal does not meet the minimum requirements of the RFP. There is no reasonable expectation that acceptable performance would be achieved. The Offeror's proposal has many deficiencies and/or gross omissions; fails to provide a reasonable, logical approach to fulfilling much of the Government's requirements; or, fails to meet many of the minimum requirements. The Offeror's proposal is so unacceptable that it would have to be completely revised in order to make it acceptable. **Very significant disadvantages. Extreme doubt that the Offeror can perform the required effort. The proposal presents unacceptably high risk to the Government.**

15.7 YES – NO Ratings. Where the specific evaluation sheets indicate a YES – NO Rating, these items will be treated as information items. They are included in the evaluation worksheets to assure a similar focus among the evaluators and to ensure that individual evaluators do not overlook proposal information provided.

16. EVALUATION FACTORS.

16.1 Factor Relative Weights. The following factors will be evaluated and rated for each proposal:

16.2 PRICE is equal in importance to TECHNICAL FACTORS.

16.3 Weight among technical factors:

FACTOR 1: BUILDING FUNCTION AND AESTHETICS: This factor is more important than Factors 2 and Factors 3 and significantly more important than Factors 4 and Factors 5.

FACTOR 2: OFFEROR PAST PERFORMANCE: This factor is equal in importance to Factor 3 and is significantly more important than Factors 4 and Factors 5.

FACTOR 3: TECHNICAL APPROACH NARRATIVE: This factor is equal in importance to Factor 2 and is significantly more important than Factors 4 and Factors 5.

FACTOR 4: CORPORATE RELEVANT SPECIALIZED EXPERIENCE: This factor is equal in importance to Factor 5.

FACTOR 5: OFFEROR SUSTAINABLE DESIGN: This factor is equal in importance to Factor 4.

FACTORS 6, 7, 8, and 9 together are equal in importance to Factor 1.

FACTOR 6: FURNISHINGS: This factor is equal in importance to Factor 7, 8, and 9.

FACTOR 7: SITE DESIGN: This factor is equal in importance to Factor 6, 8, and 9.

FACTOR 8: BUILDING SYSTEMS: This factor is equal in importance to Factor 6, 7, and 9.

FACTOR 9: PROJECT MANAGEMENT PLANS AND SCHEDULES: This factor is equal in importance to Factor 6, 7, and 8.

17. OVERALL PROPOSAL RATING

17.1 The intent of the evaluation worksheets that follow is to focus the evaluators on the key issues and concerns with respect to construction, operation, and function of the facilities. These worksheets are meant to stimulate thought and analysis and provide a framework in which to document concerns, strengths, weaknesses, and omissions. Evaluators are encouraged to document all observations and analyses when analyzing the individual proposals, and to share that analysis with the team during the consensus discussions.

17.2 It is the responsibility of the evaluation team to provide and document strengths, weaknesses, and omissions to support the assigned rating in each Factor as well as the overall rating. Comments are required for all ratings.

17.3 The evaluation team, will then weigh the assigned ratings, take into account the assembled strengths and weaknesses, and provide an overall proposal rating for each Offeror. During the consensus evaluation, a single “consensus rating” worksheet shall be completed for each proposal and signed by all the evaluators. It is imperative that all comments and supporting rational for the rating assigned be included on this consensus sheet. This final combined rating shall be used for comparison and in the trade off process as applicable.

17.4 Following the completion of the consensus discussions and rating assignments, the individual rating worksheets from each of the evaluators will be collected by the Chairperson and provided to the Contracting Officer.

18. BASIS OF AWARD

18.1 In order to determine which proposal represents the best overall value, the Government will compare proposals to one another. The Government will award a firm fixed-price contract to that responsible Offeror whose submittal and price proposal contain the combination of those criteria described in this document offering the best overall value to the Government. Best value will be determined by a comparative assessment of proposals against all source selection criteria in this RFP.

18.2 The Government is concerned with striking the most advantageous balance between technical features and cost to the Government.

18.3 As technical ratings and relative advantages and disadvantages become less distinct, differences in price between proposals are of increased importance in determining the most advantageous proposal. Conversely, as differences in price become less distinct, differences in scoring and relative advantages and disadvantages between proposals are of increased importance to the determination.

18.4 The Government reserves the right to accept other than the lowest priced offer. The right is also reserved to reject any and all offers. The basis of award will be a conforming offer, the price or cost of which may or may not be the lowest. If other than the lowest offer, it must be sufficiently more advantageous than the lowest offer to justify the payment of additional amounts.

18.5 Offerors are reminded to include their best technical and price terms in their initial offer and not to automatically assume that they will have an opportunity to participate in discussions or be asked to submit a revised offer. The Government may make award of a conforming proposal without discussions, if deemed to be within the best interests of the Government.

FY-03 CHAPEL, FORT BENNING, GA**PROPOSAL DATA SHEET****NOTE TO OFFERORS**

This OFFEROR PERFORMANCE CAPABILITY PROPOSAL DATA SHEET must be completed and attached as the first page of the body of your proposal. The information required by this data sheet may be completed directly on this form or attached to the form as supplemental data sheets.

1. NAME OF OFFEROR.

Name of Offeror(s):

If a joint venture or contractor-subcontractor association of firms, list the individual firms and briefly describe the nature of the association.

Firm 1:

Firm 2:

Firm 3:

Nature of Association:

2. DUNS NUMBER FOR OFFEROR

(If more than one DUNS number is to be considered explain affiliation to offeror)

3. ACASS identification number for design firm**4. AUTHORIZED NEGOTIATORS. FAR 52.215-11**

The offeror represents that the following persons are authorized to negotiate on its behalf with the Government in connection with this Request for Proposals (RFP).

[List names, titles, and telephone number of the authorized negotiator.]

Name of Person Authorized to Negotiate:

Negotiator's Address:

Negotiator's Telephone:

FY-03 CHAPEL, FORT BENNING, GA**5. PAST PERFORMANCE PROJECTS.**

5.1 Provide information for three projects substantially completed within the past five years by Offeror having a minimum value of \$2,000,000 to be used for reference and evaluation purposes. These should be the same projects for which Past Performance Questionnaires have been provided to the Contract Specialist Point of Contact.

5.2 If the offeror is made up of separate design and construction companies that have combined for this project, then this item must be completed twice (once for each company), for a total of six projects.

5.3 For each project provide the information shown. Failure to provide this minimum information may result in lower ratings.

6. LIQUIDATED DAMAGES. On an attached sheet, list any projects within the last three years that have been assessed liquidated damages. Explain.

7. TERMINATED PROJECTS. On an attached sheet, list any projects within the last five years that have been terminated. Explain.

8. GOVERNMENT PROJECTS. On an attached sheet, list all contracts with the Government within the last three years. Indicate Government contract number and contracting agency including contact names and telephone numbers.

9. CONTRACT AWARD AMOUNT AND FINAL CONTRACT AMOUNT. On an attached sheet provide your three most recent completed projects listing the contract award amount and the final contract amount.

10 OSHA VIOLATIONS. On an attached sheet identify all violations of the Occupational Safety and Health Act (OSHA) regulation CFR 29 Part 1910 Occupational Safety and Health Standards in the past five years. Include all supporting documentation including detail of violation, status of violation, resolution and amount of fine if applicable. If the Offeror had no OSHA violations within the past five years make the following statement "Offeror had no OSHA violations in the past five years".

SAMPLE

FY-03 CHAPEL, FORT BENNING, GA

FACTOR 2: PAST PERFORMANCE INFORMATION
(Offerors should submit for at least three projects)

Project Title:

Location:

Contract number:

Procuring activity:

Procurement point of contact and telephone number:

List date of construction completion or percent completion if construction is underway:

Address of building(s):

Address and telephone number of owner:

Indicate type of project (private sector, Government, planned unit development, etc.):

General character:

Total cost:

Total cost of all modifications:

SAMPLE

FY-03 CHAPEL, FORT BENNING, GA

FACTOR 4: CORPORATE SPECIALIZED RELEVANT EXPERIENCE.

Project Title:

Location:

Contract number:

Nature of involvement in this project, i.e. General Contractor, subcontractor, designer:

Procuring activity:

Procurement point of contact and telephone number:

List date of construction completion or percent completion if construction is underway:

Address of building(s):

Address and telephone number of owner:

Indicate type of project (private sector, Government, planned unit development, etc.):

General character:

Total cost:

**SAMPLE TRANSMITTAL LETTER
AND
PAST PERFORMANCE EVALUATION QUESTIONNAIRE**

FY-03 CHAPEL, FORT BENNING, GA

Date: _____

To: _____

We have listed your firm as a reference for work we have performed for you as listed below. Our firm has submitted a proposal under a project advertised by the U.S. Army Corps of Engineers, Savannah District: FY-03 Chapel, Fort Benning, Georgia. In accordance with Federal Acquisition Regulations (FAR), an evaluation of our firm's past performance will be completed by the Corps of Engineers. Your candid response to the attached questionnaire will assist the evaluation team in this process.

We understand that you have a busy schedule and your participation in this evaluation is greatly appreciated. Please complete the enclosed questionnaire as thoroughly as possible. Space is provided for comments. Understand that while the responses to this questionnaire may be released to the offeror, FAR 15.306 (e)(4) prohibits the release of the names of the persons providing the responses. Complete confidentiality will be maintained. Furthermore, a questionnaire has also been sent to _____ of your organization. Only one response from each office is required. If at all possible, we suggest that you individually answer this questionnaire and then coordinate your responses with that of _____, to forge a consensus on one overall response from your organization.

Please send your completed questionnaire to the following address:

U.S. Army Engineer District, Savannah
CESAS-CT-C (ATTN: Linda Elliott)
100 West Ogelthorpe Street
Savannah, Georgia 31402

The questionnaires can also be emailed to Ms. Elliott, Savannah District Contract Specialist at email linda.g.elliott@sas02.usace.army.mil. If you have questions regarding the attached questionnaire, or require assistance, please contact Ms. Elliott at 912-652-5076. Thank you for your assistance.

FY-03 CHAPEL, FORT BENNING, GA**PAST PERFORMANCE EVALUATION QUESTIONNAIRE**

Upon completion of this form, please send directly to the U.S. Army Corps of Engineers in the enclosed addressed envelope or e-mail to Linda.g.elliott@sas02.usace.army.mil. Do not return this form to our offices. Thank you.

1. Contractor/Name & Address (City and State):

2. Type of Contract: Fixed Price _____ Cost Reimbursement _____
Other (Specify) _____

3. Title of Project/Contract Number:

4. Description of Work: (Attach additional pages as necessary)

5. Complexity of Work: High _____ Mid _____ Routine _____

6. Location of Work: _____

7. Date of Award: _____

8. Status: Active _____ (provide percent complete)
Complete _____ (provide completion date)

9. Name, address and telephone number of person completing this questionnaire:

FY-03 CHAPEL, FORT BENNING, GA

10. QUALITY OF CONSTRUCTION:

Evaluate the contractor's performance in complying with contract requirements, quality achieved and overall technical expertise demonstrated.

Outstanding Quality	
Above Average Quality	
Satisfactory Quality	
Marginal Quality	
Unsatisfactory or Experienced Significant Quality Problems	

Remarks: _____

11. TIMELINESS OF PERFORMANCE:

To what extent did the contractor meet the contract and/or individual task order schedules if the contract was an indefinite delivery type contract?

Completed Substantially Ahead of Schedule (Outstanding)	
Completed Ahead of Schedule (Above Average)	
Completed on Schedule with Minor Delays Under Extenuating Circumstances (Satisfactory)	
Completed Behind Schedule (Marginal)	
Experienced Significant Delays without Justification (Unsatisfactory)	

Remarks: _____

FY-03 CHAPEL, FORT BENNING, GA

12. CUSTOMER SATISFACTION:

To what extent were the end users satisfied with:

	Quality	Cost	Schedule
Exceptionally Satisfied (Outstanding)			
Highly Satisfied (Above Average)			
Satisfied (Satisfactory)			
Somewhat Dissatisfied (Marginal)			
Highly Dissatisfied (Unsatisfactory)			

Remarks:

13. IF GIVEN THE OPPORTUNITY, WOULD YOU WORK WITH THIS CONTRACTOR AGAIN?

Yes _____ No _____ Not Sure _____

Remarks:

FY-03 CHAPEL, FORT BENNING, GA

14. OTHER REMARKS:

Use the space below to provide other information related to the contractor's performance. This may include the contractor's selection and management of subcontractors, flexibility in dealing with contract challenges, their overall concern for the Government's interest (if applicable), project awards received, etc.

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET

FACTOR 1 - BUILDING FUNCTION AND AESTHETICS

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths.

Weaknesses.

Other Comments.

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET**FACTOR 2 –OFFEROR PAST PERFORMANCE**

Item No.	Description	Rating
1.	Were three Past Performance Questionnaires Received?	YES/NO
2.	Do All the Questionnaires Received Reflect Projects Completed Within the Last 3 Years?	YES/NO
3.	Were ACASS/CCASS Ratings available?	YES/NO
4.	Do you have any Personal Experience with the Offeror?	YES/NO
5.	PAST PERFORMANCE	
OVERALL FACTOR 1 RATING		

Strengths.**Weaknesses.****Other Comments.**

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET
FACTOR 3 – TECHNICAL APPROACH NARRATIVE

Item No.	Description	Rating
1.	Technical Approach Narrative Included in Proposal?	YES – NO
2.	Understanding of the Design/Build Process	
OVERALL FACTOR 3 RATING		

Strengths.

Weaknesses.

Other Comments.

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET

FACTOR 4 – CORPORATE RELEVANT SPECIALIZED EXPERIENCE

Item No.	Description	Rating
1.	Does the Proposal Include an Example Project Listing with Suitable Explanation?	YES – NO
2.	Offeror's Relevant Experience	
OVERALL FACTOR 4 RATING		

Strengths.

Weaknesses.

Other Comments.

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET**FACTOR 5 – SUSTAINABLE DESIGN CONSIDERATIONS**

SUSTAINABILITY RATINGS		
<i>Offeror Prepared Sustainability Level</i>	<i>Associated Factor Rating</i>	<i>Points Proposed by Offeror</i>
SPIRIT POINTS		
OVER 50	Outstanding	
42 to 50	Above Average	
35 to 41	Satisfactory	
25 to 34	Marginal	
< 25	Unsatisfactory	

Factor Rating: _____

Strengths.**Weaknesses.****Other Comments.**

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET

FACTOR 6 - FURNISHINGS

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths.

Weaknesses.

Other Comments.

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET

FACTOR 7 – SITE DESIGN

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths.

Weaknesses.

Other Comments.

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET

FACTOR 8 – BUILDING SYSTEMS

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths.

Weaknesses.

Other Comments.

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET

FACTOR 9 – MANAGEMENT PLANS AND SCHEDULES

/___/ Outstanding

/___/ Above Average

/___/ Satisfactory

/___/ Marginal

/___/ Unsatisfactory

Strengths.

Weaknesses.

Other Comments.

Offeror: _____

Evaluator: _____

INDIVIDUAL RATING SUMMARY		
FACTOR	Description	Rating
1	Building Function and Aesthetics	
2	Offeror Past Performance	
3	Technical Approach Narrative	
4	Corporate Relevant Specialized Experience	
5	Sustainable Design Considerations	
6	Furnishings	
7	Site Design	
8	Building Systems	
9	Management Plans and Schedules	
OVERALL RATING		

PROPOSAL RATING CONSENSUS WORKSHEET

FACTOR DESCRIPTION	Board Member 1	Board Member 2	Board Member 3	Board Member 4	CONSENSUS
1 – Building Function and Aesthetics					
2 – Offeror Past Performance					
3 – Technical Approach Narrative					
4 – Corporate Relevant Specialized Experience					
5 – Sustainable Design Considerations					
6 – Furnishings					
7 – Site Design					
8 – Building Systems					
9 – Management Plans and Schedules					
OVERALL RATING					

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

(End of provision)

52.211-2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained--

(a) From the ASSIST database via the Internet at <http://assist.daps.mil>; or

(b) By submitting a request to the--Department of Defense Single Stock Point (DoDSSP), Building 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2667/2179, Facsimile (215) 697-1462.

(End of provision)

52.211-14 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be () DX rated order; (X) DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation. [Contracting Officer check appropriate box.]

(End of provision)

52.214-5000 APPARENT CLERICAL MISTAKES (MAR 1995)--EFARS

(a) For the purpose of initial evaluations of bids, the following will be utilized in the resolving arithmetic discrepancies found on the face of bidding schedule as submitted by the bidder:

- (1) Obviously misplaced decimal points will be corrected;
- (2) Discrepancy between unit price and extended price, the unit price will govern;
- (3) Apparent errors in extension of unit prices will be corrected;
- (4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the government will proceed on the assumption that the bidder intends his bid to be evaluated on basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

(End of statement)

52.215-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (MAY 2001)

(a) Definitions. As used in this provision--

“Discussions” are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

“In writing or written” means any worded or numbered expression which can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

“Proposal modification” is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

“Proposal revision” is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

“Time”, if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) Amendments to solicitations. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals. (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii)

showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) Submission, modification, or revision, of proposals.

(i) Offerors are responsible for submitting proposals, and any modifications, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award. (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in postaward debriefings to other offerors:

(i) The overall evaluated cost or price and technical rating of the successful offeror;

(ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;

(iii) A summary of the rationale for award; and

(iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(End of provision)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm fixed price contract resulting from this solicitation.

(End of clause)

52.219-4001 SUBCONTRACTING PLAN FOR SMALL BUSINESS CONCERNS (SEP 2002 CESAS-CT)

(a) In accordance with FAR Clause 52.219-9, large businesses must submit a subcontracting plan. A sample subcontracting plan is located in Section 00800.

(b) The subcontracting targets (expressed in terms of percentages of total planned subcontracting dollars) of the Savannah District are as follows:

Small Business	-	57.2%
----------------	---	-------

Small Disadvantaged Business	-	8.9%
HUBZone Small Business		3.0%
Women-Owned Business	-	8.1%
Veteran-Owned Small Business		0%*
Service-Disabled Veteran-Owned Small Business	-	3.0%**

If you cannot reach the above-stated targets, you must provide written justification with your subcontracting plan detailing the reasons you cannot meet the requirements.

*(c) While Savannah District does not have a specific target for subcontracting with Veteran-Owned small businesses, this must be addressed in any subcontracting plan.

** (d) Service-disabled Veteran-owned Small Business (SD/VOSB) is a composite of Veteran-Owned Small Business. The SD/VOSB target must be included in the Veteran-Owned small business target.

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
29.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Columbus, Georgia.

(End of provision)

52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENT-- CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (MAY 2002)

(a) Definitions. Construction material, designated country construction material, domestic construction material, foreign construction material, and NAFTA country construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act --Construction Materials under Trade Agreements" (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) Requests for determination of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers. (1) When an offer includes foreign construction material, other than designated country or NAFTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or NAFTA country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent

domestic, designated country, or NAFTA country construction material, and the offeror shall be required to furnish such domestic, designated country, or NAFTA country construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

52 Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

U.S. Army Engineer District, Savannah
ATTN: CESAQS-CT-C
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

Name: Jack Bartholet
Address: Room 412, Meloy Hall, Building 6, Fort Benning, Georgia 31905-1000
Telephone: (706) 545-3138

(End of provision)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases,

including--

- (1) Lump sum price;
 - (2) Alternate prices;
 - (3) Units of construction; or
 - (4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.
- (c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words “no proposal” in the space provided for any item on which no price is submitted.
- (d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

52.236-4011 Disclosure of Magnitude of Construction (FAR 36.204 and DFARS 236.204)

The estimated price range for this project is between \$5,000,000.00 and \$10,000,000.00 .

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to --

(i) Those prices,

(ii) The intention to submit an offer, or

(iii) The methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision _____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence

Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

53 Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) Definition. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it () is a women-owned business concern.

(End of provision)

52.204-4003 TAXPAYER IDENTIFICATION

Taxpayer Identification Number (TIN),” as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(a) Taxpayer Identification Number (TIN).

___ TIN:_____

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(b) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other _____

(c) Common parent.

___ Offeror is not owned or controlled by a common parent

___ Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals--

(A) Are () are not () presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have () have not (), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are () are not () presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has () has not (), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002) - ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 236220.

(2) The small business size standard is \$28,500,000.00.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it () is, () is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it () is, () is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It () is, () is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It () is, () is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

___ Black American.

___ Hispanic American.

___ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

___ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

___ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

___ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; or

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) () It has, () has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) () It has, () has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

52.223-4 RECOVERED MATERIAL CERTIFICATION (OCT 1997)

As required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(c)(3)(A)(i)), the offeror certifies, by signing this offer, that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by the applicable contract specifications.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

() (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

() (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

() (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

() (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

() (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(End of clause)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY FULL TEXT

52.202-1 DEFINITIONS (MAY 2001) --ALTERNATE I (MAR 2001)

(a) Agency head or head of the agency means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) Commercial component means any component that is a commercial item.

(c) Component means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).

(d) Contracting Officer means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(e) Nondevelopmental item means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.

(f) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(g) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

(End of clause)

52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

52.203-6 RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (JUL 1995)

(a) Except as provided in (b) of this clause, the Contractor shall not enter into any agreement with an actual or prospective subcontractor, nor otherwise act in any manner, which has or may have the effect of restricting sales by such subcontractors directly to the Government of any item or process (including computer software) made or furnished by the subcontractor under this contract or under any follow-on production contract.

(b) The prohibition in (a) of this clause does not preclude the Contractor from asserting rights that are otherwise authorized by law or regulation.

(c) The Contractor agrees to incorporate the substance of this clause, including this paragraph (c), in all subcontracts under this contract which exceed \$100,000.

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from -

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an

inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27(a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

(End of clause)

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (1) The awarding of any Federal contract.
- (2) The making of any Federal grant.
- (3) The making of any Federal loan.
- (4) The entering into of any cooperative agreement.
- (5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

- (1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.
- (3) A special Government employee, as defined in section 202, Title 18, United States Code.
- (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed

to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

(End of clause)

52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.” For paper and paper products, postconsumer material means “postconsumer fiber” defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

"Printed or copied double-sided" means printing or reproducing a document so that information is on both sides of a sheet of paper.

"Recovered material," for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as "recovered fiber" and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

(1) The name of the subcontractor.

(2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(End of clause)

52.211-15 DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (SEP 1990)

This is a rated order certified for national defense use, and the Contractor shall follow all the requirements of the Defense Priorities and Allocations System regulation (15 CFR 700).

(End of clause)

52.215-2 AUDIT AND RECORDS--NEGOTIATION (JUN 1999)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.

(c) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

(1) The proposal for the contract, subcontract, or modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the contract, subcontract, or modification; or

(4) Performance of the contract, subcontract or modification.

(d) Comptroller General--(1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (1) the effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports and (2) the data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

(1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;

(2) For which cost or pricing data are required; or

(3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(End of clause)

52.215-11 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, except that this clause does not apply to any modification if an exception under FAR 15.403-1 applies.

(b) If any price, including profit or fee, negotiated in connection with any modification under this clause, or any cost reimbursable under this contract, was increased by any significant amount because (1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its

Certificate of Current Cost or Pricing Data, (2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data, or (3) any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) of this clause.

(c) Any reduction in the contract price under paragraph (b) of this clause due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which--

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d)(1) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2)(i) Except as prohibited by subdivision (d)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

52.215-13 SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall--

(1) Become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4; and

(2) Be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (b) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4 on the date of agreement on price or the date of award, whichever is later.

(End of clause)

52.215-21 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) Exceptions from cost or pricing data. (1) In lieu of submitting cost or pricing data for modifications under this contract, for price adjustments expected to exceed the threshold set forth at FAR 15.403-4 on the date of the agreement on price or the date of the award, whichever is later, the Contractor may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable--

(i) Identification of the law or regulation establishing the price offered. If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) Information on modifications of contracts or subcontracts for commercial items. (A) If--

(1) The original contract or subcontract was granted an exception from cost or pricing data requirements because the price agreed upon was based on adequate price competition or prices set by law or regulation, or was a contract or subcontract for the acquisition of a commercial item; and

(2) The modification (to the contract or subcontract) is not exempted based on one of these exceptions, then the Contractor may provide information to establish that the modification would not change the contract or subcontract from a contract or subcontract for the acquisition of a commercial item to a contract or subcontract for the acquisition of an item other than a commercial item.

(B) For a commercial item exception, the Contractor shall provide, at a minimum, information on prices at which the same item or similar items have previously been sold that is adequate for evaluating the reasonableness of the price of the modification. Such information may include--

(1) For catalog items, a copy of or identification of the catalog and its date, or the appropriate pages for the offered items, or a statement that the catalog is on file in the buying office to which the proposal is being submitted. Provide a copy or describe current discount policies and price lists (published or unpublished), e.g., wholesale, original equipment manufacturer, or reseller. Also explain the basis of each offered price and its relationship to the established catalog price, including how the proposed price relates to the price of recent sales in quantities similar to the proposed quantities.

(2) For market-priced items, the source and date or period of the market quotation or other basis for market price, the base amount, and applicable discounts. In addition, describe the nature of the market.

(3) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item.

(2) The Contractor grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this clause, and the reasonableness of price. For items priced using catalog or market prices, or law or regulation, access does not extend to cost or profit information or other data relevant solely to the Contractor's determination of the prices to be offered in the catalog or marketplace.

(b) Requirements for cost or pricing data. If the Contractor is not granted an exception from the requirement to submit cost or pricing data, the following applies:

(1) The Contractor shall submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408.

As soon as practicable after agreement on price, but before award (except for unpriced actions), the Contractor shall submit a Certificate of Current Cost or Pricing Data, as prescribed by FAR 15.406-2.

(End of clause)

52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

___ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (JAN 2002)--ALTERNATE II (OCT 2001).

(a) This clause does not apply to small business concerns.

(b) Definitions. As used in this clause--

Commercial item means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

Commercial plan means a subcontracting plan (including goals) that covers the offeror's fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (e.g., division, plant, or product line).

Individual contract plan means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror's planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

Master plan means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

Subcontract means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) Proposals submitted in response to this solicitation shall include a subcontracting plan that separately addresses subcontracting with small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns. If the offeror is submitting an individual contract plan, the plan must separately address subcontracting with small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the

resultant contract. The subcontracting plan shall be negotiated within the time specified by the Contracting Officer. Failure to submit and negotiate a subcontracting plan shall make the offeror ineligible for award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of--

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror's total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to HUBZone small business concerns;

(v) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vi) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to--

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (e.g., existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRO-Net as its source list does not relieve a firm of its responsibilities (e.g., outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

- (i) Small business concerns;
- (ii) Veteran-owned small business concerns;
- (iii) HUBZone small business concerns;
- (iv) Small disadvantaged business concerns; and
- (v) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, HUBZone small business, small disadvantaged business and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled ``Utilization of Small Business Concerns" in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of \$500,000 (\$1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the requirements of this clause.

(10) Assurances that the offeror will--

- (i) Cooperate in any studies or surveys as may be required;
 - (ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;
 - (iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.
 - (iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.
- (11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the offeror's efforts to locate small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated)
- (i) Source lists (e.g., PRO-Net), guides, and other data that identify small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.
 - (ii) Organizations contacted in an attempt to locate sources that are small business, veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.
 - (iii) Records on each subcontract solicitation resulting in an award of more than \$100,000, indicating--
 - (A) Whether small business concerns were solicited and, if not, why not;

- (B) Whether veteran-owned small business concerns were solicited and, if not, why not;
 - (C) Whether HUBZone small business concerns were solicited and, if not, why not;
 - (D) Whether small disadvantaged business concerns were solicited and, if not, why not;
 - (E) Whether women-owned small business concerns were solicited and, if not, why not; and
 - (F) If applicable, the reason award was not made to a small business concern.
- (iv) Records of any outreach efforts to contact--
- (A) Trade associations;
 - (B) Business development organizations;
 - (C) Conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and
 - (D) Veterans service organizations.
- (v) Records of internal guidance and encouragement provided to buyers through--
- (A) Workshops, seminars, training, etc.; and
 - (B) Monitoring performance to evaluate compliance with the program's requirements.
- (vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having commercial plans need not comply with this requirement.
- (e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:
- (1) Assist small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.
 - (2) Provide adequate and timely consideration of the potentialities of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all "make-or-buy" decisions.
 - (3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business firms.
 - (4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owner small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided--

(1) the master plan has been approved, (2) the offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer, and (3) goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization Of Small Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) Standard Form 294, Subcontracting Report for Individual Contracts. This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) Standard Form 295, Summary Subcontract Report. This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.

(End of clause)

52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for--

(1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.

(2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.

(3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.

(4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

52.219-16 LIQUIDATED DAMAGES-SUBCONTRACTING PLAN (JAN 1999)

(a) Failure to make a good faith effort to comply with the subcontracting plan, as used in this clause, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled "Small Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) Performance shall be measured by applying the percentage goals to the total actual subcontracting dollars or, if a commercial plan is involved, to the pro rata share of actual subcontracting dollars attributable to Government contracts covered by the commercial plan. If, at contract completion or, in the case of a commercial plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled "Small Business Subcontracting Plan," the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to demonstrate what good faith efforts have been made and to discuss the matter. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial plans, the Contracting Officer who approved the plan will perform the functions of the Contracting Officer under this clause on behalf of all agencies with contracts covered by the commercial plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled Disputes, from any final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that the Government may have.

(End of clause)

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are

authorized to work at paid employment in the community under the laws of such jurisdiction, if--

- (a)(1) The worker is paid or is in an approved work training program on a voluntary basis;
 - (2) Representatives of local union central bodies or similar labor union organizations have been consulted;
 - (3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and
 - (4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and
- (b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION.
(SEP 2000)

- (a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.
- (b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.
- (c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.
- (d) Payrolls and basic records.
- (1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.
- (2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding \$100,000 and require subcontractors to include these provisions in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their

representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

54 If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(End of clause)

52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(End of clause)

52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to

provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b)(1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(End of clause)

52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program

registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(End of clause)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(End of clause)

52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988))

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination-Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b)(1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(ii) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

(End of clause)

52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

(End of clause)

52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

(End of clause)

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and

not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(End of clause)

52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

55 The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(End of clause)

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

(a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance;

provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions. "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade, each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the

geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

(i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;

(ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user rest rooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--

(1) Actively participates in the group;

- (2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;
- (3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;
- (4) Makes a good-faith effort to meet its individual goals and timetables; and
- (5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
- (i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.
- (j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
- (k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.
- (l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.
- (m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.
- (n) The Contractor shall designate a responsible official to--
- (1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;
- (2) Submit reports as may be required by the Government; and
- (3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(End of clause)

52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Definitions. As used in this clause--

All employment openings means all positions except executive and top management, those positions that will be filled from within the Contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days duration, and part-time employment.

Executive and top management means any employee--

(1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;

(2) Who customarily and regularly directs the work of two or more other employees;

(3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight;

(4) Who customarily and regularly exercises discretionary powers; and

(5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs (1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

Other eligible veteran means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

Positions that will be filled from within the Contractor's organization means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Qualified special disabled veteran means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

Special disabled veteran means--

(1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability--

(i) Rated at 30 percent or more; or

(ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (i.e., a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or

(2) A person who was discharged or released from active duty because of a service-connected disability.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.

(b) General. (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

(iii) Rate of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) Listing openings. (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) Postings. (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall--

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement, or other contract understanding, that the Contractor is bound by the terms of the Act and is committed to take affirmative action to employ, and advance in employment, qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) Subcontracts. The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of \$25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-37 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

52.222-41 SERVICE CONTRACT ACT OF 1965, AS AMENDED (MAY 1989)

(a) Definitions. "Act," as used in this clause, means the Service Contract Act of 1965, as amended (41 U.S.C. 351, et seq.).

"Contractor," as used in this clause or in any subcontract, shall be deemed to refer to the subcontractor, except in the term "Government Prime Contractor."

"Service employee," as used in this clause, means any person engaged in the performance of this contract other than any person employed in a bona fide executive, administrative, or professional capacity, as these terms are defined in Part 541 of Title 29, Code of Federal Regulations, as revised. It includes all such persons regardless of any contractual relationship that may be alleged to exist between a Contractor or subcontractor and such persons.

(b) Applicability. This contract is subject to the following provisions and to all other applicable provisions of the Act and regulations of the Secretary of Labor (29 CFR Part 4). This clause does not apply to contracts or subcontracts administratively exempted by the Secretary of Labor or exempted by 41 U.S.C. 356, as interpreted in Subpart C of 29 CFR Part 4.

(c) Compensation. (1) Each service employee employed in the performance of this contract by the Contractor or any subcontractor shall be paid not less than the minimum monetary wages and shall be furnished fringe benefits in accordance with the wages and fringe benefits determined by the Secretary of Labor, or authorized representative, as specified in any wage determination attached to this contract.

(2)(i) If a wage determination is attached to this contract, the Contractor shall classify any class of service employee which is not listed therein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination) so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed class of employees shall be paid the monetary wages and furnished the fringe benefits as are determined pursuant to the procedures in this paragraph (c).

(ii) This conforming procedure shall be initiated by the Contractor prior to the performance of contract work by the unlisted class of employee. The Contractor shall submit Standard Form (SF) 1444, Request For Authorization of Additional Classification and Rate, to the Contracting Officer no later than 30 days after the unlisted class of employee performs any contract work. The Contracting Officer shall review the proposed classification and rate and promptly submit the completed SF 1444 (which must include information regarding the agreement or disagreement of the employees' authorized representatives or the employees themselves together with the agency recommendation), and all pertinent information to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor. The Wage and Hour Division will approve, modify, or disapprove the action or render a final determination in the event of disagreement within 30 days of receipt or will notify the Contracting Officer within 30 days of receipt that additional time is necessary.

(iii) The final determination of the conformance action by the Wage and Hour Division shall be transmitted to the Contracting Officer who shall promptly notify the Contractor of the action taken. Each affected employee shall be furnished by the Contractor with a written copy of such determination or it shall be posted as a part of the wage determination.

(iv)(A) The process of establishing wage and fringe benefit rates that bear a reasonable relationship to those listed in a wage determination cannot be reduced to any single formula. The approach used may vary from wage determination to wage determination depending on the circumstances. Standard wage and salary administration practices which rank various job classifications by pay grade pursuant to point schemes or other job factors may, for example, be relied upon. Guidance may also be obtained from the way different jobs are rated under Federal pay systems (Federal Wage Board Pay System and the General Schedule) or from other wage determinations issued in the same locality. Basic to the establishment of any conformable wage rate(s) is the concept that a pay relationship should be maintained between job classifications based on the skill required and the duties performed.

(B) In the case of a contract modification, an exercise of an option, or extension of an existing contract, or in any other case where a Contractor succeeds a contract under which the classification in question was previously conformed pursuant to paragraph (c) of this clause, a new conformed wage rate and fringe benefits may be assigned

to the conformed classification by indexing (i.e., adjusting) the previous conformed rate and fringe benefits by an amount equal to the average (mean) percentage increase (or decrease, where appropriate) between the wages and fringe benefits specified for all classifications to be used on the contract which are listed in the current wage determination, and those specified for the corresponding classifications in the previously applicable wage determination. Where conforming actions are accomplished in accordance with this paragraph prior to the performance of contract work by the unlisted class of employees, the Contractor shall advise the Contracting Officer of the action taken but the other procedures in subdivision (c)(2)(ii) of this clause need not be followed.

(C) No employee engaged in performing work on this contract shall in any event be paid less than the currently applicable minimum wage specified under section 6(a)(1) of the Fair Labor Standards Act of 1938, as amended.

(v) The wage rate and fringe benefits finally determined under this subparagraph (c)(2) of this clause shall be paid to all employees performing in the classification from the first day on which contract work is performed by them in the classification. Failure to pay the unlisted employees the compensation agreed upon by the interested parties and/or finally determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract.

(vi) Upon discovery of failure to comply with subparagraph (c)(2) of this clause, the Wage and Hour Division shall make a final determination of conformed classification, wage rate, and/or fringe benefits which shall be retroactive to the date such class or classes of employees commenced contract work.

(3) Adjustment of Compensation. If the term of this contract is more than 1 year, the minimum monetary wages and fringe benefits required to be paid or furnished thereunder to service employees under this contract shall be subject to adjustment after 1 year and not less often than once every 2 years, under wage determinations issued by the Wage and Hour Division.

(d) Obligation to Furnish Fringe Benefits. The Contractor or subcontractor may discharge the obligation to furnish fringe benefits specified in the attachment or determined under subparagraph (c)(2) of this clause by furnishing equivalent combinations of bona fide fringe benefits, or by making equivalent or differential cash payments, only in accordance with Subpart D of 29 CFR Part 4.

(e) Minimum Wage. In the absence of a minimum wage attachment for this contract, neither the Contractor nor any subcontractor under this contract shall pay any person performing work under this contract (regardless of whether the person is a service employee) less than the minimum wage specified by section 6(a)(1) of the Fair Labor Standards Act of 1938. Nothing in this clause shall relieve the Contractor or any subcontractor of any other obligation under law or contract for payment of a higher wage to any employee.

(f) Successor Contracts. If this contract succeeds a contract subject to the Act under which substantially the same services were furnished in the same locality and service employees were paid wages and fringe benefits provided for in a collective bargaining agreement, in the absence of the minimum wage attachment for this contract setting forth such collectively bargained wage rates and fringe benefits, neither the Contractor nor any subcontractor under this contract shall pay any service employee performing any of the contract work (regardless of whether or not such employee was employed under the predecessor contract), less than the wages and fringe benefits provided for in such collective bargaining agreement, to which such employee would have been entitled if employed under the predecessor contract, including accrued wages and fringe benefits and any prospective increases in wages and fringe benefits provided for under such agreement. No Contractor or subcontractor under this contract may be relieved of the foregoing obligation unless the limitations of 29 CFR 4.1b(b) apply or unless the Secretary of Labor or the Secretary's authorized representative finds, after a hearing as provided in 29 CFR 4.10 that the wages and/or fringe benefits provided for in such agreement are substantially at variance with those which prevail for services of a character similar in the locality, or determines, as provided in 29 CFR 4.11, that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations. Where it is found in accordance with the review procedures provided in 29 CFR 4.10 and/or 4.11 and Parts 6 and 8 that some or all of the wages and/or fringe benefits contained in a predecessor Contractor's collective bargaining agreement are substantially at variance with those which prevail for services of a character

similar in the locality, and/or that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations, the Department will issue a new or revised wage determination setting forth the applicable wage rates and fringe benefits. Such determination shall be made part of the contract or subcontract, in accordance with the decision of the Administrator, the Administrative Law Judge, or the Board of Service Contract Appeals, as the case may be, irrespective of whether such issuance occurs prior to or after the award of a contract or subcontract (53 Comp. Gen. 401 (1973)). In the case of a wage determination issued solely as a result of a finding of substantial variance, such determination shall be effective as of the date of the final administrative decision.

(g) Notification to Employees. The Contractor and any subcontractor under this contract shall notify each service employee commencing work on this contract of the minimum monetary wage and any fringe benefits required to be paid pursuant to this contract, or shall post the wage determination attached to this contract. The poster provided by the Department of Labor (Publication WH 1313) shall be posted in a prominent and accessible place at the worksite. Failure to comply with this requirement is a violation of section 2(a)(4) of the Act and of this contract.

(h) Safe and Sanitary Working Conditions. The Contractor or subcontractor shall not permit any part of the services called for by this contract to be performed in buildings or surroundings or under working conditions provided by or under the control or supervision of the Contractor or subcontractor which are unsanitary, hazardous, or dangerous to the health or safety of the service employees. The Contractor or subcontractor shall comply with the safety and health standards applied under 29 CFR Part 1925.

(i) Records. (1) The Contractor and each subcontractor performing work subject to the Act shall make and maintain for 3 years from the completion of the work, and make them available for inspection and transcription by authorized representatives of the Wage and Hour Division, Employment Standards Administration, a record of the following:

(i) For each employee subject to the Act--

(A) Name and address and social security number;

(B) Correct work classification or classifications, rate or rates of monetary wages paid and fringe benefits provided, rate or rates of payments in lieu of fringe benefits, and total daily and weekly compensation;

(C) Daily and weekly hours worked by each employee; and

(D) Any deductions, rebates, or refunds from the total daily or weekly compensation of each employee.

(ii) For those classes of service employees not included in any wage determination attached to this contract, wage rates or fringe benefits determined by the interested parties or by the Administrator or authorized representative under the terms of paragraph (c) of this clause. A copy of the report required by subdivision (c)(2)(ii) of this clause will fulfill this requirement.

(iii) Any list of the predecessor Contractor's employees which had been furnished to the Contractor as prescribed by paragraph (n) of this clause.

(2) The Contractor shall also make available a copy of this contract for inspection or transcription by authorized representatives of the Wage and Hour Division.

(3) Failure to make and maintain or to make available these records for inspection and transcription shall be a violation of the regulations and this contract, and in the case of failure to produce these records, the Contracting Officer, upon direction of the Department of Labor and notification to the Contractor, shall take action to cause suspension of any further payment or advance of funds until the violation ceases.

(4) The Contractor shall permit authorized representatives of the Wage and Hour Division to conduct interviews with employees at the worksite during normal working hours.

(j) Pay Periods. The Contractor shall unconditionally pay to each employee subject to the Act all wages due free and clear and without subsequent deduction (except as otherwise provided by law or regulations, 29 CFR Part 4), rebate, or kickback on any account. These payments shall be made no later than one pay period following the end of the regular pay period in which the wages were earned or accrued. A pay period under this Act may not be of any duration longer than semi-monthly.

(k) Withholding of Payments and Termination of Contract. The Contracting Officer shall withhold or cause to be withheld from the Government Prime Contractor under this or any other Government contract with the Prime Contractor such sums as an appropriate official of the Department of Labor requests or such sums as the Contracting Officer decides may be necessary to pay underpaid employees employed by the Contractor or subcontractor. In the event of failure to pay any employees subject to the Act all or part of the wages or fringe benefits due under the Act, the Contracting Officer may, after authorization or by direction of the Department of Labor and written notification to the Contractor, take action to cause suspension of any further payment or advance of funds until such violations have ceased. Additionally, any failure to comply with the requirements of this clause may be grounds for termination of the right to proceed with the contract work. In such event, the Government may enter into other contracts or arrangements for completion of the work, charging the Contractor in default with any additional cost.

(l) Subcontracts. The Contractor agrees to insert this clause in all subcontracts subject to the Act.

(m) Collective Bargaining Agreements Applicable to Service Employees. If wages to be paid or fringe benefits to be furnished any service employees employed by the Government Prime Contractor or any subcontractor under the contract are provided for in a collective bargaining agreement which is or will be effective during any period in which the contract is being performed, the Government Prime Contractor shall report such fact to the Contracting Officer, together with full information as to the application and accrual of such wages and fringe benefits, including any prospective increases, to service employees engaged in work on the contract, and a copy of the collective bargaining agreement. Such report shall be made upon commencing performance of the contract, in the case of collective bargaining agreements effective at such time, and in the case of such agreements or provisions or amendments thereof effective at a later time during the period of contract performance such agreements shall be reported promptly after negotiation thereof.

(n) Seniority List. Not less than 10 days prior to completion of any contract being performed at a Federal facility where service employees may be retained in the performance of the succeeding contract and subject to a wage determination which contains vacation or other benefit provisions based upon length of service with a Contractor (predecessor) or successor (29 CFR 4.173), the incumbent Prime Contractor shall furnish the Contracting Officer a certified list of the names of all service employees on the Contractor's or subcontractor's payroll during the last month of contract performance. Such list shall also contain anniversary dates of employment on the contract either with the current or predecessor Contractors of each such service employee. The Contracting Officer shall turn over such list to the successor Contractor at the commencement of the succeeding contract.

(o) Rulings and Interpretations. Rulings and interpretations of the Act are contained in Regulations, 29 CFR Part 4.

(p) Contractor's Certification. (1) By entering into this contract, the Contractor (and officials thereof) certifies that neither it (nor he or she) nor any person or firm who has a substantial interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of the sanctions imposed under section 5 of the Act.

(2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract under section 5 of the Act.

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(q) Variations, Tolerances, and Exemptions Involving Employment. Notwithstanding any of the provisions in paragraphs (b) through (o) of this clause, the following employees may be employed in accordance with the following variations, tolerances, and exemptions, which the Secretary of Labor, pursuant to section 4(b) of the Act

prior to its amendment by Pub. L. 92-473, found to be necessary and proper in the public interest or to avoid serious impairment of the conduct of Government business:

(1) Apprentices, student-learners, and workers whose earning capacity is impaired by age, physical or mental deficiency, or injury may be employed at wages lower than the minimum wages otherwise required by section 2(a)(1) or 2(b)(1) of the Act without diminishing any fringe benefits or cash payments in lieu thereof required under section 2(a)(2) of the Act, in accordance with the conditions and procedures prescribed for the employment of apprentices, student-learners, handicapped persons, and handicapped clients of sheltered workshops under section 14 of the Fair Labor Standards Act of 1938, in the regulations issued by the Administrator (29 CFR Parts 520, 521, 524, and 525).

(2) The Administrator will issue certificates under the Act for the employment of apprentices, student-learners, handicapped persons, or handicapped clients of sheltered workshops not subject to the Fair Labor Standards Act of 1938, or subject to different minimum rates of pay under the two acts, authorizing appropriate rates of minimum wages (but without changing requirements concerning fringe benefits or supplementary cash payments in lieu thereof), applying procedures prescribed by the applicable regulations issued under the Fair Labor Standards Act of 1938 (29 CFR Parts 520, 521, 524, and 525).

(3) The Administrator will also withdraw, annul, or cancel such certificates in accordance with the regulations in 29 CFR Parts 525 and 528.

(r) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed and individually registered in a bona fide apprenticeship program registered with a State Apprenticeship Agency which is recognized by the U.S. Department of Labor, or if no such recognized agency exists in a State, under a program registered with the Bureau of Apprenticeship and Training, Employment and Training Administration, U.S. Department of Labor. Any employee who is not registered as an apprentice in an approved program shall be paid the wage rate and fringe benefits contained in the applicable wage determination for the journeyman classification of work actually performed. The wage rates paid apprentices shall not be less than the wage rate for their level of progress set forth in the registered program, expressed as the appropriate percentage of the journeyman's rate contained in the applicable wage determination. The allowable ratio of apprentices to journeymen employed on the contract work in any craft classification shall not be greater than the ratio permitted to the Contractor as to his entire work force under the registered program.

(s) Tips. An employee engaged in an occupation in which the employee customarily and regularly receives more than \$30 a month in tips may have the amount of these tips credited by the employer against the minimum wage required by section 2(a)(1) or section 2(b)(1) of the Act, in accordance with section 3(m) of the Fair Labor Standards Act and Regulations, 29 CFR Part 531. However, the amount of credit shall not exceed \$1.34 per hour beginning January 1, 1981. To use this provision--

(1) The employer must inform tipped employees about this tip credit allowance before the credit is utilized;

(2) The employees must be allowed to retain all tips (individually or through a pooling arrangement and regardless of whether the employer elects to take a credit for tips received);

(3) The employer must be able to show by records that the employee receives at least the applicable Service Contract Act minimum wage through the combination of direct wages and tip credit; and

(4) The use of such tip credit must have been permitted under any predecessor collective bargaining agreement applicable by virtue of section 4(c) of the Act.

Disputes Concerning Labor Standards. The U.S. Department of Labor has set forth in 29 CFR Parts 4, 6, and 8 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S.

Department of Labor, or the employees or their representatives.

(End of clause)

52.222-42 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (MAY 1989)

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

THIS STATEMENT IS FOR INFORMATION ONLY: IT IS NOT A WAGE DETERMINATION

Employee Class Monetary Wage-Fringe Benefits

(End of clause)

52.222-44 FAIR LABOR STANDARDS ACT AND SERVICE CONTRACT ACT--PRICE ADJUSTMENT
(FEB 2002)

(a) This clause applies to both contracts subject to area prevailing wage determinations and contracts subject to Contractor collective bargaining agreements.

(b) The Contractor warrants that the prices in this contract do not include any allowance for any contingency to cover increased costs for which adjustment is provided under this clause.

(c) The contract price or contract unit price labor rates will be adjusted to reflect increases or decreases by the Contractor in wages and fringe benefits to the extent that these increases or decreases are made to comply with--

(1) An increased or decreased wage determination applied to this contract by operation of law; or

(2) An amendment to the Fair Labor Standards Act of 1938 that is enacted subsequent to award of this contract, affects the minimum wage, and becomes applicable to this contract under law.

(d) Any such adjustment will be limited to increases or decreases in wages and fringe benefits as described in paragraph (c) of this clause, and to the accompanying increases or decreases in social security and unemployment taxes and workers' compensation insurance; it shall not otherwise include any amount for general and administrative costs, overhead, or profit.

(e) The Contractor shall notify the Contracting Officer of any increase claimed under this clause within 30 days after the effective date of the wage change, unless this period is extended by the Contracting Officer in writing. The Contractor shall promptly notify the Contracting Officer of any decrease under this clause, but nothing in the clause shall preclude the Government from asserting a claim within the period permitted by law. The notice shall contain a statement of the amount claimed and any relevant supporting data that the Contracting Officer may reasonably require. Upon agreement of the parties, the contract price or contract unit price labor rates shall be modified in writing. The Contractor shall continue performance pending agreement on or determination of any such adjustment and its effective date.

(f) The Contracting Officer or an authorized representative shall, until the expiration of 3 years after final payment under the contract, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor.

(End of clause)

52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998)

(a) Executive Order 12856 of August 3, 1993, requires Federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)(42 U.S.C. 11001-11050) and the Pollution Prevention Act of 1990 (PPA)(42 U.S.C. 13101-13109).

(b) The Contractor shall provide all information needed by the Federal facility to comply with the emergency planning reporting requirements of Section 302 of EPCRA; the emergency notice requirements of Section 304 of EPCRA; the list of Material Safety Data Sheets required by Section 311 of EPCRA; the emergency and hazardous chemical inventory forms of Section 312 of EPCRA; the toxic chemical release inventory of Section 313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA; and the toxic chemical reduction goals requirements of Section 3-302 of Executive Order 12856.

(End of clause)

52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause --

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-- within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

- (i) The dangers of drug abuse in the workplace;
- (ii) The Contractor's policy of maintaining a drug-free workplace;
- (iii) Any available drug counseling, rehabilitation, and employee assistance programs; and
- (iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

- (i) Abide by the terms of the statement; and
- (ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

- (i) Taking appropriate personnel action against such employee, up to and including termination; or
- (ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of clause)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C.

13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--

(1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

(End of clause)

52.225-11 BUY AMERICAN ACT--CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (JUL 2002)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Designated country means any of the following countries: Aruba, Austria, Bangladesh, Belgium, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Canada, Cape Verde, Central African Republic, Chad, Comoros, Denmark.

Djibouti, Equatorial Guinea, Finland, France, Gambia, Germany, Greece, Guinea, Guinea-Bissau, Haiti, Hong Kong, Ireland, Israel, Italy, Japan.

Kiribati, Korea, Republic of, Lesotho, Liechtenstein, Luxembourg, Malawi, Maldives, Mali, Mozambique, Nepal, Netherlands, Niger, Norway, Portugal, Rwanda.

Sao Tome and Principe, Sierra Leone, Singapore, Somalia, Spain, Sweden, Switzerland, Tanzania U.R., Togo, Tuvalu, Uganda, United Kingdom, Vanuatu, Western Samoa, Yemen.

Designated country construction material means a construction material that--

(1) Is wholly the growth, product, or manufacture of a designated country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a designated country into a new and different construction material distinct from the materials from which it was transformed.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

North American Free Trade Agreement country means Canada or Mexico.

North American Free Trade Agreement country construction material means a construction material that--

- (1) Is wholly the growth, product, or manufacture of a North American Free Trade Agreement (NAFTA) country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a NAFTA country into a new and different construction material distinct from the materials from which it was transformed.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Construction materials. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) and the Balance of Payments Program by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act and the North American Free Trade Agreement (NAFTA) apply to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country and NAFTA country construction materials.

(2) The Contractor shall use only domestic, designated country, or NAFTA country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to the construction materials or components listed by the Government as follows: None.

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of this clause if the Government determines that--

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act.

(1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

- (ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.
- (iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).
- (iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison			
Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1:			
Foreign construction material....			
Domestic construction material...			
Item 2:			
Foreign construction material....			
Domestic construction material...			

\1\ Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).
List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.
Include other applicable supporting information.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the

Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

(End of clause)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

56 The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at (FAR)

2.101.to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be 20 percent of the bid price or \$3,000,000.00 whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of clause)

52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government.

(b) Any surety fails to furnish reports on its financial condition as required by the Government;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting officer has the right to immediately draw on the ILC.

(End of clause)

52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

(End of clause)

52.228-11 PLEDGES OF ASSETS (FEB 1992)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

(1) Pledge of assets; and

(2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;

(2) A recorded lien on real estate. The offeror will be required to provide--

(i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

(End of clause)

52.228-12 PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS. (OCT 1995)

In accordance with Section 806(a)(3) of Pub. L. 102-190, as amended by Sections 2091 and 8105 of Pub. L. 103-355, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the

performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requester.

(End of clause)

52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of less than \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of less than \$25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Account party's name _____

Account party's address _____

For Solicitation No. _____ (for reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$_____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

[Confirming Financial Institution's Letterhead or Name and Address]

(Date) _____

Our Letter of Credit Advice Number _____

Beneficiary: _____ [U.S. Government agency]

Issuing Financial Institution: _____

Issuing Financial Institution's LC No.: _____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. \$_____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of _____ [Beneficiary Agency] _____ the sum of United States \$ _____.
This draft is drawn under Irrevocable Letter of Credit No. _____.

[Beneficiary Agency]

By: _____

(End of clause)

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c)). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (APR 2003)

(a) As used in this clause--

"Contract date" means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties" means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax" means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax" means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

Local taxes includes taxes imposed by a possession or territory of the United States, Puerto Rico, or the Northern Mariana Islands, if the contract is performed wholly or partly in any of those areas.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEP 2002)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

(End of clause)

52.232-10 PAYMENTS UNDER FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (AUG 1987)

(a) Estimates shall be made monthly of the amount and value of the work and services performed by the Contractor under this contract which meet the standards of quality established under this contract. The estimates shall be prepared by the Contractor and accompanied by any supporting data required by the Contracting Officer.

(b) Upon approval of the estimate by the Contracting Officer, payment upon properly executed vouchers shall be made to the Contractor, as soon as practicable, of 90 percent of the approved amount, less all previous payments; provided, that payment may be made in full during any months in which the Contracting Officer determines that performance has been satisfactory. Also, whenever the Contracting Officer determines that the work is substantially complete and that the amount retained is in excess of the amount adequate for the protection of the Government, the Contracting Officer may release the excess amount to the Contractor.

(c) Upon satisfactory completion by the Contractor and acceptance by the Contracting Officer of the work done by the Contractor under the "Statement of Architect-Engineer Services", the Contractor will be paid the unpaid balance of any money due for work under the statement, including retained percentages relating to this portion of the work. Upon satisfactory completion and final acceptance of the construction work, the Contractor shall be paid any unpaid

balance of money due under this contract.

(d) Before final payment under the contract, or before settlement upon termination of the contract, and as a condition precedent thereto, the Contractor shall execute and deliver to the Contracting Officer a release of all claims against the Government arising under or by virtue of this contract, other than any claims that are specifically excepted by the Contractor from the operation of the release in amounts stated in the release.

(e) Notwithstanding any other provision in this contract, and specifically paragraph (b) of this clause, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(End of clause)

52.232-17 INTEREST (JUNE 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid. reproduce, prepare derivative works, distribute copies to the public, and (b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this contract.

(2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

(End of clause)

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986) - ALTERNATE I (APR 1984)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending

agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence. Unless otherwise stated in this contract, payments to an assignee of any amounts due or to become due under this contract shall not, to the extent specified in the Act, be subject to reduction or setoff.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

(End of clause)

52.232-26 PROMPT PAYMENT FOR FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Due date. The due date for making invoice payments is--

(i) For work or services completed by the Contractor, the later of the following two events:

(A) The 30th day after the designated billing office receives a proper invoice from the Contractor (except as provided in paragraph (a)(1)(iii) of this clause).

(B) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice, when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the settlement.

(ii) The due date for progress payments is the 30th day after Government approval of Contractor estimates of work or services accomplished.

(iii) If the designated billing office fails to annotate the invoice or payment request with the actual date of receipt at the time of receipt, the payment due date is the 30th day after the date of the Contractor's invoice or payment request, provided the designated billing office receives a proper invoice or payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(x) of this clause. If the invoice does not comply with these requirements, the designated billing office will return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(ix) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(x) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance or approval is deemed to occur constructively as shown in paragraphs (a)(4)(i)(A) and (B) of this clause. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the

determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, Contractor compliance with a contract provision, or requested progress payment amounts. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(A) For work or services completed by the Contractor, Government acceptance is deemed to occur constructively on the 7th day after the Contractor completes the work or services in accordance with the terms and conditions of the contract.

(B) For progress payments, Government approval is deemed to occur on the 7th day after the designated billing office receives the Contractor estimates.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315, in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest is due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt, provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(iii) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through

(a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) Third-party deficiency reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.233-1 DISPUTES. (JUL 2002)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) Claim, as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The

submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding \$100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

(End of clause)

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in

solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

(End of clause)

52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

(End of clause)

52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

(End of clause)

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

(End of clause)

52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

(End of clause)

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

(End of clause)

52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity

recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

(End of clause)

52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

(End of clause)

52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

(End of clause)

52.236-13 ACCIDENT PREVENTION (NOV 1991) – ALTERNATE I (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

- (2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and
- (3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

57 If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(c) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(f) Before commencing the work, the Contractor shall-

(1) Submit a written proposed plan for implementing this clause. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in contract work performance and a plan for controlling these hazards; and

(2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

(End of clause)

52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how

the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

(End of clause)

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the

contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(End of clause)

52.236-22 DESIGN WITHIN FUNDING LIMITATIONS (APR 1984)

(a) The Contractor shall accomplish the design services required under this contract so as to permit the award of a contract, using standard Federal Acquisition Regulation procedures for the construction of the facilities designed at a price that does not exceed the estimated construction contract price as set forth in paragraph (c) below. When bids or proposals for the construction contract are received that exceed the estimated price, the contractor shall perform such redesign and other services as are necessary to permit contract award within the funding limitation. These additional services shall be performed at no increase in the price of this contract. However, the Contractor shall not be required to perform such additional services at no cost to the Government if the unfavorable bids or proposals are the result of conditions beyond its reasonable control.

(b) The Contractor will promptly advise the Contracting Officer if it finds that the project being designed will exceed or is likely to exceed the funding limitations and it is unable to design a usable facility within these limitations. Upon receipt of such information, the Contracting Officer will review the Contractor's revised estimate of construction cost. The Government may, if it determines that the estimated construction contract price set forth in this contract is so low that award of a construction contract not in excess of such estimate is improbable, authorize a change in scope or materials as required to reduce the estimated construction cost to an amount within the estimated construction contract price set forth in paragraph (c) below, or the Government may adjust such estimated construction contract price. When bids or proposals are not solicited or are unreasonably delayed, the Government shall prepare an estimate of constructing the design submitted and such estimate shall be used in lieu of bids or proposals to determine compliance with the funding limitation.

(c) The estimated construction contract price for the project described in this contract is \$

(End of clause)

52.236-24 WORK OVERSIGHT IN ARCHITECT-ENGINEER CONTRACTS (APR 1984)

The extent and character of the work to be done by the Contractor shall be subject to the general oversight, supervision, direction, control, and approval of the Contracting Officer.

(End of clause)

52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

(End of clause)

52.239-4001 Year 2000 Compliance

The contractor shall ensure products provided under this contract, to include hardware, software, firmware, and middleware, whether acting alone or combined as a system, are Year 2000 compliant as defined as follows: Year 2000 compliant means with respect to information technology, that the information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information, used in combination with the information technology being acquired, properly exchanges date/time data with it.

52.239-4005 Year 2000 Compliance - Construction Contracts

a. In accordance with FAR 39.106, the contractor shall ensure that with respect to any design, construction, goods, or services under this contract as well as any subsequent task/delivery orders issued under this contract (if applicable), all information technology contained therein shall be Year 2000 compliant. Specifically:

The contractor shall:

(1) Perform, maintain, and provide an inventory of all major components to include structures, equipment, items, parts, and furnishings under this contract and each task/delivery order which may be affected by the Y2K compliance requirement.

(2) Indicate whether each component is currently Year 2000 compliant or requires an upgrade for compliance prior to government acceptance.

(End of Clause)

52.239-4006 Security Contract Language for all Corps of Engineers'
Unclassified Contracts (PIL 2003-06, 19 Feb 03)

All Contractor employees (U.S. citizens and Non- U.S. citizens) working under this contract (to include grants, cooperative agreements and task orders) who require access to Automated Information Systems (AIS), (stand alone computers, network computers/systems, e-mail) shall, at a minimum, be designated into an ADP-III position (non-sensitive) in accordance with DoD 5220-22-R, Industrial Security Regulation. The investigative requirements for an ADP-III position are a favorable National Agency Check (NAC), SF-85P, Public Trust Position. The contractor shall have each applicable employee complete a SF-85P and submit to the USACE, Savannah District Security Officer, ATTN: CESAS-SL, 100 West Oglethorpe Avenue, Savannah, GA 31401 within three (3) working days after award of any contract or task order, and shall be submitted prior to the individual being permitted access to an AIS. Contractors who have a commercial or government entity (CAGE) Code and Facility Security Clearance through the Defense Security Service shall process the NACs and forward visit requests/results of NAC to the Savannah District Security Officer (address above). For those contractors who do not have a CAGE Code or Facility Security Clearance, the Savannah District Security Office will process the investigation in coordination with the Contractor and contract employees.

In accordance with Engineering Regulation, ER 380-1-18, Section 4, foreign nationals who work on Corps of Engineers' contracts or task orders shall be approved by the HQUSACE Foreign Disclosure Officer or higher before beginning work on the contract/task order. This regulation includes subcontractor employees. (NOTE: exceptions to the above requirement include foreign nationals who perform janitorial and/or ground maintenance services.) The contractor shall submit to the Division/District Contract Office, the names of all foreign nationals proposed for performance under this contract/task order, along with documentation to verify that he/she was legally admitted into the United States and has authority to work and/or go to school in the US. Such documentation may include a US passport, Certificate of US citizenship (INS Form N-560 or N-561), Certificate of Naturalization (INS Form N-550 or N-570), foreign passport with I-551 stamp or attached INS Form I-94 indicating employment authorization, Alien Registration Receipt Card with photograph (INS Form I-151 or I-551), Temporary Resident Card (INS Form I-688), Employment Authorization Card (INS Form I-688A), Reentry Permit (INS Form I-327), Refugee Travel Document (INS Form I-571), Employment Authorization Document issued by the INS which contains a photograph (INS Form I-688B).

Classified contracts require the issuance of a DD Form 254 (Department of Defense Contract Security Classification Specification).

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification

shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

(End of clause)

52.243-1 CHANGES--FIXED-PRICE (AUG 1987) - ALTERNATE III (APR 1984)

(a) The Contracting Officer may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in the services to be performed.

(b) If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, the Contracting Officer shall make an equitable adjustment in the contract price, the delivery schedule, or both, and shall modify the contract.

(c) The Contractor must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if the Contracting Officer decides that the facts justify it, the Contracting Officer may receive and act upon a proposal submitted before final payment of the contract.

(d) If the Contractor's proposal includes the cost of property made obsolete or excess by the change, the Contracting Officer shall have the right to prescribe the manner of the disposition of the property.

(e) Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.

(f) No services for which an additional cost or fee will be charged by the Contractor shall be furnished without the prior written authorization of the Contracting Officer.

(End of clause)

52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Government-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

- (1) the date, circumstances, and source of the order and
- (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(End of clause)

52.244-5 COMPETITION IN SUBCONTRACTING (DEC 1996)

(a) The Contractor shall select subcontractors (including suppliers) on a competitive basis to the maximum practical extent consistent with the objectives and requirements of the contract.

(b) If the Contractor is an approved mentor under the Department of Defense Pilot Mentor-Protege Program (Pub. L. 101-510, section 831 as amended), the Contractor may award subcontracts under this contract on a noncompetitive basis to its proteges.

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996) -
ALTERNATE I (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made

by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

(End of clause)

52.249-7 TERMINATION (FIXED-PRICE ARCHITECT-ENGINEER) (APR 1984)

(a) The Government may terminate this contract in whole or, from time to time, in part, for the Government's convenience or because of the failure of the Contractor to fulfill the contract obligations. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to the Contracting Officer all data, drawings, specifications, reports, estimates, summaries, and other information and materials accumulated in performing this contract, whether completed or in process.

(b) If the termination is for the convenience of the Government, the Contracting Officer shall make an equitable adjustment in the contract price but shall allow no anticipated profit on unperformed services.

(c) If the termination is for failure of the Contractor to fulfill the contract obligations, the Government may complete the work by contract or otherwise and the Contractor shall be liable for any additional cost incurred by the Government.

(d) If, after termination for failure to fulfill contract obligations, it is determined that the Contractor had not failed, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Government.

58 The rights and remedies of the Government provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,

(ii) acts of the Government in either its sovereign or contractual capacity,

(iii) acts of another Contractor in the performance of a contract with the Government,

(iv) fires,

(v) floods,

(vi) epidemics,

(vii) quarantine restrictions,

(viii) strikes,

(ix) freight embargoes,

(x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.253-1 COMPUTER GENERATED FORMS (JAN 1991)

(a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.

(b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.

59 If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

(End of clause)

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES (MAR 1999)

(a) Definitions. As used in this clause—

(1) “Arising out of a contract with the DoD” means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) “Conviction of fraud or any other felony” means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) “Date of conviction” means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly—

(1) Employing a person under a prohibition specified in paragraph (b) of this clause; or

(2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

(1) The person involved;

- (2) The nature of the conviction and resultant sentence or punishment imposed;
 - (3) The reasons for the requested waiver; and
 - (4) An explanation of why a waiver is in the interest of national security.
- (g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.
- (h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.
- (End of clause)

252.203-7002 DISPLAY OF DOD HOTLINE POSTER (DEC 1991)

- (a) The Contractor shall display prominently in common work areas within business segments performing work under Department of Defense (DoD) contracts, DoD Hotline Posters prepared by the DoD Office of the Inspector General.
- (b) DoD Hotline Posters may be obtained from the DoD Inspector General, ATTN: Defense Hotline, 400 Army Navy Drive, Washington, DC 22202-2884.

60 The Contractor need not comply with paragraph (a) of this clause if it has established a mechanism, such as a hotline, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

(End of clause)

252.204-7000 DISCLOSURE OF INFORMATION (DEC 1991)

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless--

- (1) The Contracting Officer has given prior written approval; or
 - (2) The information is otherwise in the public domain before the date of release.
- (b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
- (c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

(End of clause)

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr.gov>.

(End of clause)

252.205-7000 PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450 (c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for profit or nonprofit purposes; which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

(b) The Contractor shall provide cooperative agreement holders, upon their request, with a list of those appropriate employees or offices responsible for entering into subcontracts under defense contracts. The list shall include the business address, telephone number, and area of responsibility of each employee or office.

(c) The Contractor need not provide the listing to a particular cooperative agreement holder more frequently than once a year.

(End of clause)

252.209-7000 ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)

(a) The Contractor shall not deny consideration for a subcontract award under this contract to a potential subcontractor subject to on-site inspection under the INF Treaty, or a similar treaty, solely or in part because of the actual or potential presence of Soviet inspectors at the subcontractor's facility, unless the decision is approved by the Contracting Officer.

(b) The Contractor shall incorporate this clause, including this paragraph (b), in all solicitations and contracts exceeding the simplified acquisition threshold in part 13 of the Federal Acquisition Regulation, except those for commercial items.

(End of clause)

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before

entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

(End of clause)

252.215-7000 PRICING ADJUSTMENTS (DEC 1991)

The term "pricing adjustment," as used in paragraph (a) of the clauses entitled "Price Reduction for Defective Cost or Pricing Data - Modifications," "Subcontractor Cost or Pricing Data," and "Subcontractor Cost or Pricing Data - Modifications," means the aggregate increases and/or decreases in cost plus applicable profits.

(End of clause)

252.219-7003 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR. 1996)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, clause of this contract.

(a) *Definitions. Historically black colleges and universities*, as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institutions, as used in this clause, means institutions meeting the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1)).

(b) Except for company or division-wide commercial items subcontracting plans, the term *small disadvantaged business*, when used in the FAR 52.219-9 clause, includes historically black colleges and universities and minority institutions, in addition to small disadvantaged business concerns.

(c) Work under the contract or its subcontracts shall be credited toward meeting the small disadvantaged business concern goal required by paragraph (d) of the FAR 52.219-9 clause when:

(1) It is performed on Indian lands or in joint venture with an Indian tribe or a tribally-owned corporation, and

(2) It meets the requirements of 10 U.S.C. 2323a.

(d) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 46-48), may be counted toward the Contractor's small business subcontracting goal.

(e) A mentor firm, under the Pilot Mentor-Protege Program established under Section 831 of Pub. L. 101-510, as amended, may count toward its small disadvantaged business goal, subcontracts awarded--

(f) The master plan approval referred to in paragraph (f) of the FAR 52.219-9 clause is approval by the Contractor's cognizant contract administration activity.

(g) In those subcontracting plans which specifically identify small, small disadvantaged, and women-owned small businesses, the Contractor shall notify the Administrative Contracting Officer of any substitutions of firms that are not small, small disadvantaged, or women-owned small businesses for the firms listed in the subcontracting plan. Notifications shall be in writing and shall occur within a reasonable period of time after award of the subcontract. Contractor-specified formats shall be acceptable.

(End of clause)

252.223-7001 HAZARD WARNING LABELS (DEC 1991)

(a) "Hazardous material," as used in this clause, is defined in the Hazardous Material Identification and Material Safety Data clause of this contract.

(b) The Contractor shall label the item package (unit container) of any hazardous material to be delivered under this contract in accordance with the Hazard Communication Standard (29 CFR 1910.1200 et seq). The Standard requires that the hazard warning label conform to the requirements of the standard unless the material is otherwise subject to the labeling requirements of one of the following statutes:

(1) Federal Insecticide, Fungicide and Rodenticide Act;

(2) Federal Food, Drug and Cosmetics Act;

(3) Consumer Product Safety Act;

(4) Federal Hazardous Substances Act; or

(5) Federal Alcohol Administration Act.

(c) The Offeror shall list which hazardous material listed in the Hazardous Material Identification and Material Safety Data clause of this contract will be labeled in accordance with one of the Acts in paragraphs (b)(1) through (5) of this clause instead of the Hazard Communication Standard. Any hazardous material not listed will be interpreted to mean that a label is required in accordance with the Hazard Communication Standard.

MATERIAL (If None, Insert "None.")

ACT

(d) The apparently successful Offeror agrees to submit, before award, a copy of the hazard warning label for all hazardous materials not listed in paragraph (c) of this clause. The Offeror shall submit the label with the Material Safety Data Sheet being furnished under the Hazardous Material Identification and Material Safety Data clause of this contract.

(e) The Contractor shall also comply with MIL-STD-129, Marking for Shipment and Storage (including revisions adopted during the term of this contract).

(End of clause)

252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (APR 1993)

(a) "Definitions".

As used in this clause --

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non-DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (FEB 2003)

(a) Definitions. As used in this clause--

(1) Component means any item supplied to the Government as part of an end product or of another component.

(2) End product means supplies delivered under a line item of this contract.

(b) The Contractor shall deliver under this contract only such of the following items, either as end products or components, that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico:

(1) Food.

(2) Clothing.

(3) Tents, tarpaulins, or covers.

(4) Cotton and other natural fiber products.

(5) Woven silk or woven silk blends.

(6) Spun silk yarn for cartridge cloth.

(7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics.

(8) Canvas products.

(9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles).

(10) Any item of individual equipment (Federal Supply Class 8465) manufactured from or containing fibers, yarns, fabrics, or materials listed in this paragraph (b).

(c) This clause does not apply--

(1) To items listed in section 25.104(a) of the Federal Acquisition Regulation (FAR), or other items for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;

(2) To end products incidentally incorporating cotton, other natural fibers, or wool, for which the estimated value of the cotton, other natural fibers, or wool--

(i) Is not more than 10 percent of the total price of the end product; and (ii) Does not exceed the simplified acquisition threshold in FAR part 2;

(3) To foods that have been manufactured or processed in the United States, its possessions, or Puerto Rico, regardless of where the foods (and any component if applicable) were grown or produced, except that this clause does apply to fish, shellfish, or seafood manufactured or processed in the United States and fish, shellfish, or seafood contained in foods manufactured or processed in the United States;

(4) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or

(5) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--

(i) The fabric is to be used as a component of an end product that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--

(A) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);

(B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;

(C) Upholstered seats (whether for household, office, or other use); and

(D) Parachutes (Federal Supply Class 1670); or

(ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

(End of clause)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

252.226-7001 Utilization of Indian Organizations and Indian-Owned Economic Enterprises-DoD Contracts (Sep 2001)

(a) Definitions. As used in this clause--

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo, or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C. Chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutes not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1452 (c).

"Interested party" means a contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contract shall use its best efforts to give Indian organizations and Indian-owned economic enterprises the maximum practicable opportunity to participate in the subcontracts it awards, to the fullest extent consistent with efficient performance of the contract.

(c) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless and interested party challenges its status or the Contracting Officer has independent reason to question that status.

(d) In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs, Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street NW, MS-2626-MIB, Washington, DC 20240-4000. The BIA will determine the eligibility and will notify the Contracting Officer. No incentive payment will be made--

(1) Within 59 working days of subcontract award;

(2) While a challenge is pending; or

(3) If a subcontractor is determined to be an ineligible participant.

(e)(1) The Contractor, on its own behalf or on behalf of a subcontractor at any tier, may request an adjustment under the Indian Incentive Program to the following:

(i) The estimated cost of cost-type contract.

(ii) The target cost of a cost-plus-incentive-fee contract.

(iii) The target cost and ceiling price of a fixed-price incentive contract.

(iv) The price of a firm-fixed-price contract.

(2) The amount of the adjustment that may be made to the contract is 5 percent of the estimated cost, target cost, or firm-fixed price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(3) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(4) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor.

(5) If the Contractor requests and receives an adjustment on behalf of a subcontractor, the Contractor is obligated to pay the subcontractor the adjustment.

(f) The Contractor shall insert the substance of this clause, including this paragraph (f), in all subcontracts that--

(1) Are for other than commercial items; and

(2) Are expected to exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation.

(End of clause)

252.227-7022 GOVERNMENT RIGHTS (UNLIMITED) (MAR 1979)

The Government shall have unlimited rights, in all drawings, designs, specifications, notes and other works developed in the performance of this contract, including the right to use same on any other Government design or construction without additional compensation to the Contractor. The Contractor hereby grants to the Government a paid-up license throughout the world to all such works to which he may assert or establish any claim under design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish the original or copies of all such works on the request of the Contracting Officer.

(End of clause)

252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with part 231 of the Defense FAR Supplement, in effect on the date of this contract.

(End of clause)

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

252.242-7004 MATERIAL MANAGEMENT AND ACCOUNTING SYSTEM (SEP 1996)

(a) Definitions. As used in this clause--

(1) Material management and accounting system means the Contractor's system or systems for planning, controlling, and accounting for the acquisition, use, issuing, and disposition of material. Material management and accounting systems may be manual or automated. They may be stand-alone systems or they may be integrated with planning, engineering, estimating, purchasing, inventory, accounting, or other systems.

(2) Valid time-phased requirements means material which is--

Needed to fulfill the production plan, including reasonable quantities for scrap, shrinkage, yield, etc.; and

(ii) Charged/billed to contracts or other cost objectives in a manner consistent with the need to fulfill the production plan.

(3) Contractor means a business unit as defined in section 31.001 of the Federal Acquisition Regulation (FAR).

(b) General. The Contractor agrees to--

(1) Maintain a material management and accounting system (MMAS) that--

(i) Reasonably forecasts material requirements;

(ii) Ensures that costs of purchased and fabricated material charged or allocated to a contract are based on valid time-phased requirements; and

(iii) Maintains a consistent, equitable, and unbiased logic for costing of material transactions.

(2) Assess its MMAS and take reasonable action to comply with the MMAS standards in paragraph (f) of this clause.

(c) Applicability. Paragraphs (d) and (e) of this clause apply only if the Contractor--

(1) Is a large business; and

(2) Received, in its fiscal year preceding award of this contract, Department of Defense prime contracts or subcontracts, and their modifications totaling--

(i) \$70 million or more; or

(ii) \$30 million or more (but less than \$70 million), and is notified in writing by the Contracting Officer that paragraphs (d) and (e) apply.

(d) Disclosure, demonstration, and maintenance requirements. (1) The Contractor shall--

Disclose its MMAS to the Administrative Contracting Officer in writing; and

(ii) If requested by the Administrative Contracting Officer, demonstrate that the MMAS conforms to the standards in paragraph (f) of this clause.

(2) An MMAS disclosure is adequate when the Contractor has provided the Administrative Contracting Officer with documentation which--

- (i) Accurately describes those policies, procedures, and practices that the Contractor currently uses in its MMAS; and
 - (ii) Provides sufficient detail for the Government to reasonably make an informed judgment regarding the adequacy of the MMAS.
- (3) An MMAS demonstration is adequate when the Contractor has provided the Administrative Contracting Officer--
- (i) Sufficient evidence to demonstrate the degree of compliance of its MMAS with the standards at paragraph (f) of this clause; and
 - (ii) Identification of any significant deficiencies, the estimated cost impact of the deficiency, and a comprehensive corrective action plan.
- (4) The Contractor shall disclose significant changes in its MMAS to the Administrative Contracting Officer within 30 days of implementation.
- (5) If the contractor desires the Government to protect such information as privileged or confidential, the Contractor shall--
- (i) Notify the Government representative to whom the information is submitted, i.e., the ACO, or the auditor; and
 - (ii) Ensure an appropriate legend is on the face of the document(s) at the time of submission.
- (e) Deficiencies. (1) If the Contractor receives a report which identifies deficiencies in its MMAS, the Contractor agrees to respond as follows--
- (i) If the Contractor agrees with the report findings and recommendations, the Contractor shall--
 - (A) Within 30 days, state its agreement in writing; and
 - (B) Within 60 days, correct the deficiencies or submit a corrective action plan.
 - (ii) If the Contractor disagrees with the report findings and recommendations, the Contractor shall, within 30 days, state its rationale for each area of disagreement.
- (2) The Administrative Contracting Officer shall evaluate the Contractor's response and notify the Contractor of the--
- (i) Determination concerning remaining deficiencies;
 - (ii) Adequacy of any proposed or completed corrective action plan; and
 - (iii) Need for any new or revised corrective action plan.
- (f) MMAS standards. MMAS systems shall have adequate internal accounting and administrative controls to ensure system and data integrity, and comply with the following:
- (1) Have an adequate system description including policies, procedures, and operating instructions which comply with the Federal Acquisition Regulation and Defense FAR Supplement;
 - (2) Ensure that costs of purchased and fabricated material charged or allocated to a contract are based on valid time-phased requirements as impacted by minimum/economic order quantity restrictions--

(i) A 98 percent bill of material accuracy and a 95 percent master production schedule accuracy are desirable as a goal in order to ensure that requirements are both valid and appropriately time-phased.

(ii) If systems have accuracy levels below these, the Contractor shall demonstrate that--

(A) There is no material harm to the Government due to lower accuracy levels; and

(B) The cost to meet the accuracy goals is excessive in relation to the impact on the Government;

(3) Provide a mechanism to identify, report, and resolve system control weaknesses and manual override. Systems should identify operational exceptions such as excess/residual inventory as soon as known;

(4) Provide audit trails and maintain records (manual and those in machine readable form) necessary to evaluate system logic and to verify through transaction testing that the system is operating as desired;

(5) Establish and maintain adequate levels of record accuracy, and include reconciliation of recorded inventory quantities to physical inventory by part number on a periodic basis. A 95 percent accuracy level is desirable. If systems have an accuracy level below 95 percent, the Contractor shall demonstrate that--

(i) There is no material harm to the Government due to lower accuracy levels; and

(ii) The cost to meet the accuracy goal is excessive in relation to the impact on the Government;

(6) Provide detailed descriptions of circumstances which will result in manual or system generated transfers of parts;

(7) Maintain a consistent, equitable, and unbiased logic for costing of material transactions--

(i) The Contractor shall maintain and disclose written policies describing the transfer methodology and the loan/pay-back technique.

(ii) The costing methodology may be standard or actual cost, or any of the inventory costing methods in 48 CFR 9904.411-50(b). Consistency shall be maintained across all contract and customer types, and from accounting period to accounting period for initial charging and transfer charging.

(iii) The system should transfer parts and associated costs within the same billing period. In the few instances where this may not be appropriate, the Contractor may accomplish the material transaction using a loan/pay-back technique. The "loan/pay-back technique" means that the physical part is moved temporarily from the contract, but the cost of the part remains on the contract. The procedures for the loan/pay-back technique must be approved by the Administrative Contracting Officer. When the technique is used, the Contractor shall have controls to ensure--

(A) Parts are paid back expeditiously;

(B) Procedures and controls are in place to correct any overbilling that might occur;

(C) Monthly, at a minimum, identification of the borrowing contract and the date the part was borrowed; and

(D) The cost of the replacement part is charged to the borrowing contract;

(8) Where allocations from common inventory accounts are used, have controls (in addition to those in paragraphs (b)(2) and (7) of this clause) to ensure that--

(i) Reallocations and any credit due are processed no less frequently than the routine billing cycle;

(ii) Inventories retained for requirements which are not under contract are not allocated to contracts; and

(iii) Algorithms are maintained based on valid and current data;

(9) Notwithstanding FAR 45.505-3(f)(1)(ii), have adequate controls to ensure that physically commingled inventories that may include material for which costs are charged or allocated to fixed-price, cost-reimbursement, and commercial contracts do not compromise requirements of any of the standards in paragraphs (f)(1) through (8) of this clause. Government furnished material shall not be--

(i) Physically commingled with other material; or

(ii) Used on commercial work; and

(10) Be subjected to periodic internal audits to ensure compliance with established policies and procedures.

(End of clause)

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

- (1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or
- (2) Final adjustment under an incentive provision of the contract.

252.244-7000 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DOD)
(MAR 2000)

In addition to the clauses listed in paragraph (c) of the Subcontracts for Commercial Items and Commercial Components clause of this contract (Federal Acquisition Regulation 52.244-6), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:

252.225-7014 Preference for Domestic Specialty Metals, Alternate I (10 U.S.C. 2241 note).

252.247-7023 Transportation of Supplies by Sea (10 U.S.C. 2631).

252.247-7024 Notification of Transportation of Supplies by Sea (10 U.S.C. 2631).

(End of clause)

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAY 2002)

(a) Definitions. As used in this clause --

- (1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.
- (2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.
- (3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.
- (4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.
- (5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.
- (6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.
 - (i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.
 - (ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--

(i) This contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Maritime Administration, Office of Cargo Preference, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information:

- (1) Prime contract number;
- (2) Name of vessel;
- (3) Vessel flag of registry;
- (4) Date of loading;
- (5) Port of loading;
- (6) Port of final discharge;
- (7) Description of commodity;
- (8) Gross weight in pounds and cubic feet if available;
- (9) Total ocean freight in U.S. dollars; and
- (10) Name of the steamship company.

(f) The Contractor shall provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

- (1) No ocean transportation was used in the performance of this contract;
- (2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
- (3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or
- (4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY
_____	_____	_____
_____	_____	_____
_____	_____	_____
TOTAL	_____	_____

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) In the award of subcontracts for the types of supplies described in paragraph (b)(2) of this clause, the Contractor shall flow down the requirements of this clause as follows:

(1) The Contractor shall insert the substance of this clause, including this paragraph (h), in subcontracts that exceed the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(2) The Contractor shall insert the substance of paragraphs (a) through (e) of this clause, and this paragraph (h), in subcontracts that are at or below the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(End of clause)

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for--

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(End of clause)

Section 00800 - Special Contract Requirements

CLAUSES INCORPORATED BY FULL TEXT

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within five calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 600 calendar days. The time stated for completion shall include final cleanup of the premises.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$1,145.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.211-13 TIME EXTENSIONS (SEP 2000)

Time extensions for contract changes will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements related to the changed work and that the remaining contract completion dates for all other portions of the work will not be altered. The change order also may provide an equitable readjustment of liquidated damages under the new completion schedule.

(End of clause)

52.219-4002 REPORTING REQUIREMENTS--SUBCONTRACTING PLAN (CESAD-CT JUL 1993)

(a) Retainage will be withheld from progress payments in an amount sufficient to protect the Government's ability to assess Liquidated Damages in accordance with FAR clause 52.219-0016 for failure to submit timely SF 294 and SF 295 Reports. The amount of retainage will be determined in accordance with the following formula:

(b) Total dollar amount proposed for subcontracting to small business multiplied by percentage of actual progress on the contract, up to a maximum of 10% of the given progress payment, shall be withheld from the next progress payment due after a contractor fails to submit a required report. If one or more reports have been submitted before such failure, formula for determining the amount of retainage will be adjusted by deducting any amounts reported as

subcontracted to small business from the total dollar amount proposed to be subcontracted and the difference multiplied by the percent of actual progress, up to a maximum of 10% of the given progress payment.

(End of clause)

52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-
DESIGNATED PRODUCTS (AUG 2000)

(a) Definitions. As used in this clause--

Postconsumer material means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material."

Recovered material means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall--

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of postconsumer material content; and

(2) Submit this estimate to

U.S. Army Engineer District, Savannah,
ATTN: CESAS-CT-C
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

(End of clause)

52.223-4002 U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL, EM
385-1-1

This paragraph applies to contracts and purchase orders that require the contractor to comply with EM 385-1-1 (e.g., contracts that include the Accident Prevention clause at FAR 52.236-13 and/or other safety provisions). EM 385-1-1 and its changes are available at <http://www.hq.usace.army.mil>. (At the HQ homepage, select Safety and Occupational Health.) The Contractor shall be responsible for complying with the current edition and all changes posted on the web through the date that is 10 calendar days prior to the date offers are due. If the solicitation is amended to extend the time set for receipt of offers, the 10 calendar days rule stated above shall be applied against the amended date. (For example, if offers are due on 10 April, all changes posted on or before 31 March shall apply to the contract. If the time for receipt of offers is extended from 10 April to 20 April, all changes posted on or before 10 April shall apply to the contract.)

52.228-4001 RECOMMENDED INSURANCE COVERAGE – MAY 2000

The Design-Build Contractor's attention is invited to the contract requirements concerning "RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN" and "WARRANTY OF CONSTRUCTION WORK". These requirements

vest in the Contractor complete responsibility for the professional quality, technical accuracy, and coordination of all design, drawings, specifications and other work or materials furnished by his in-house or consultant forces. The Design-Build Contractor must correct and revise any errors or deficiencies in his work, notwithstanding any review, approval, acceptance or payment by the Government. The Contractor must correct and change any work resulting from his defective design at no additional cost to the Government. The requirements further stipulate that the Design-Build Contractor shall be liable to the Government for the damages to the Government caused by negligent performance. Though it is not a mandatory requirement, this is to recommend that the Design-Build Contractor investigate and obtain appropriate insurance coverage for such liability protection.

(End of Clause)

52.228-4002 REQUIRED INSURANCE (FEB 1987 SAS) (Ref. FAR 28.307)

(a) The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance:

Comprehensive and Employer's Liability Insurance in the amount required by the State law in which the work is to be performed under this contract.

Comprehensive General Liability Insurance in an amount not less than \$500,000 per accident.

Automobile Liability Insurance: \$200,000 per person and \$500,000 per accident for bodily injury liability and \$20,000 property damage liability.

(b) Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or written statement of the above-required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation, or any material change in the policies adversely affecting the interests of the Government in such insurance, shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than 30 days after written notice thereof to the Contracting Officer.

(c) The Contractor agrees to insert the substance of this clause, including this subparagraph (c), in all subcontracts hereunder.

(End of clause)

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE MAR 1995)--EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region _____. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-4007 ACCOUNTING AND APPROPRIATION DATA (APR 1989 CESAS-RM)

973 21 2050 08 8021 P1000 3220 S09133

(End of clause)

52.232-4008 DESIGNATED BILLING OFFICE (APR 1989 CESAS-RM)

Invoices will be mailed to:

U.S. Army Corps of Engineers
West Georgia Area Office
Room 412, Meloy Hall, Building 6
Fort Benning, Georgia 31905-1009

(End of Clause)

52.232-4009 DESIGNATED PAYMENT OFFICE (AUG 1998 CESAS-RM-F)

Payment will be made by:

U.S. Army Corps of Engineers Finance Center
ATTN: CEFC-AO-P
5720 Integrity Drive
Millington, TN 38054-5005

(End of clause)

52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least 20 percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

(End of clause)

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

- (a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by soil test borings.
- (b) Weather conditions . . . See Clause Time Extensions for Unusually Severe Weather Section 00800 52.249-4001.
- (c) Transportation facilities The site of the work is available by Public Highway.

(End of clause)

52.236-4001 DESIGN-BUILD CONTRACT-ORDER OF PRECEDENCE – AUG 1997

(a) The contract includes the standard contract clauses and schedules current at the time of award. It also entails: (1) the solicitation in its entirety, including all drawings, cuts and illustrations, and any amendments during proposal evaluation and selection, and (2) the successful Offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any ways bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of the various portions of this contract, precedence shall be given in the following order:

(1) Betterments: Any portions of the Offeror's proposal which both meet and exceed the provisions of the solicitation

(2) The provisions of the solicitation. (see also Contract Clause: SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.)

(3) All other provisions of the accepted proposal.

(4) Any design products, including but not limited to plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc. These are "deliverables" under the contract and are not part of the contract itself. Design products must conform to all provisions of the contract, in the order of precedence herein.

(End of Clause)

52.236-4003 RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN – FEB 2000

- (i) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other non-construction services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawings, specifications, and other non-construction services and perform any necessary rework or modifications, including any damage to real or personal property, resulting from the design error or omission.

- (ii) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract. The Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of these services furnished under this contract.
- (iii) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law
- (iv) If the Contractor is comprised of more than one legal entity shall be jointly and severally liable thereunder.

(End of Clause)

NOTE: If your proposal does **not** include Fast Track Design/Build, then this provision shall apply.

52.236-4004 SEQUENCE OF DESIGN-CONSTRUCTION – AUG 1997

- (a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. No construction may be started, <with the exception of....clearing, etc...> until the Government reviews the Final Design submission and determines it satisfactory for purposes of beginning construction. The Contracting Officer will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.
- (b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.
- (c) No payment will be made for any in-place construction until all required submittals have been made, reviewed and are satisfactory to the Government.

(End of Clause)

NOTE: If your proposal contains Fast Track Design/Build, then this provision shall apply.

52.236-4005 SEQUENCE OF DESIGN- CONSTRUCTION (FAST TRACK) – AUG 1997

- (a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submissions requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. The contractor may begin construction on portions of the work for which the Government has reviewed the final design submission and has determined satisfactory for purposes of beginning construction. The Contracting Officer will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

- (b) If the Government allows the Contractor to proceed with the construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.
- (c) No payment will be made for any in-place construction until all required submittals have been made, reviewed and are satisfactory to the Government.

(End of Clause)

52.236-4006 CONSTRUCTOR'S ROLE DURING DESIGN – JUN 1998

The Contractor's construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this contract. In addition to the typical required construction activities, the constructor's involvement includes, but is not limited to actions such as: integrating the design schedule into the Master Schedule to maximize the effectiveness of fast-tracking design and construction (within the limits allowed in the contract), ensuring constructability and economy of the design, integrating the shop drawing and installation drawing process into the design, executing the material and equipment acquisition programs to meet critical schedules, effectively interfacing the construction QC program with the design QC program, and maintaining and providing the design team with accurate, up-to-date redline and as-built documentation. The Contractor shall require and manage the active involvement of key trade subcontractors in the above activities.

(End of Clause)

52.236-4008 DESIGN CONFERENCES – AUG 1997

- (a) Pre-Work: As part of the Pre-Work Conference conducted after contract award, key representatives of the Government and the Contractor will review the design submission and procedures specified herein, discuss the preliminary design schedule and provisions for phase completion of the D-B documents with construction activities (fast tracking), as appropriate, meet with Corps of Engineers Design Review personnel and key Using Agency points of contract and any other appropriate pre-design discussion items.
- (b) Design Charette: After award of the contract, the Contractor shall visit the site and conduct extensive interviews, and problem solving discussions with the individual users, base personnel, Corps of Engineers personnel to acquire all necessary site information, review user options, and discuss user needs. The Contractor shall document all discussions. The design shall be finalized as direct result of these meetings.
- (c) Design Review Conferences: Review conferences will be held on base for each design submittal. The Contractor will bring the personnel that developed the design submittal to the review conference. The conferences will take place the week after the review is complete.

(End of Clause)

52.236-4009 PARTNERING – FEB 2000

In order to most effectively accomplish this contract, the Government proposes to form a partnership with the Contractor to develop a cohesive building team. It is anticipated that this partnership would involve the Contractor, primary subcontractors and designers and the Corps of Engineers. This partnership would strive to develop a

cooperative management team drawing on the strengths of each team member in an effort to achieve quality project within budget and on schedule. This partnership would be bilateral in membership and participation will be totally voluntary. Any cost associated with effectuating this partnership, excluding travel and lodging cost of Government personnel, will be borne by the contractor.

(End of Clause)

52.236-4015 PRECONSTRUCTION CONFERENCE (OCT 1988 SAS) (Ref. FAR 36.305)

(a) A preconstruction conference will be arranged by the Area/Resident Engineer after award of contract and before commencement of work. The Area/Resident Engineer will notify the Contractor of the time and date set for the meeting. At this conference, the Contractor shall be oriented with respect to Government procedures and line of authority, contractual, administrative, and construction matters.

(b) The Contractor shall bring to this conference, in completed form, a Certificate of Insurance, plus the following items in either completed or draft form:

- Accident Prevention Plan (5 copies)
(use format shown in Attachment 1 to SECTION 00800)
- Quality Control Plan (5 copies)
- Letter Appointing Superintendent
- Transmittal Register
- Power of Attorney and Certified Copy of Resolution
- Network Analysis System, when applicable
- List of Subcontractors

(c) A letter of record will be written documenting all items discussed at the conference, and a copy will be furnished by the Area/Resident Engineer to all in attendance.

(End of clause)

52.236-4016 VIDEO TAPING OPERATING AND MAINTENANCE INSTRUCTIONS (MAR 1987 SASCD-SQ)

For all of the operating and maintenance instructions which are required in the contract specifications, the Contractor shall video tape these instructions as they are presented to the Government representatives. These tapes shall provide clear and understandable detailed instructions for all items required by the contract specifications. The tapes shall be prepared by an experienced video director/cameraman using good quality half-inch VHS color tape with correct sound equipment, lighting, and backdrop. The sound and picture quality shall be high and subject to approval by the Contracting Officer. The tapes are intended as followup training for other Government representatives at a later date. They must be suitable for this purpose. The Contractor shall be responsible for the contents of the instructions and shall verify that they are correct prior to taping. The Contractor may submit individual equipment manufacturer's instructional tape(s), provided they meet the above qualifications and cover the actual equipment that is installed. The tape(s) shall be for specific equipment identified by contents and contract name and number.

The Contractor shall submit one copy of the tape(s) to the Contracting Officer for review and approval. Unacceptable tapes are to be corrected by the Contractor as indicated by the Contracting Officer at no additional cost to the Government.

(End of clause)

52.236-4017 SUBMITTAL OF MODIFICATION COST ESTIMATE PROPOSALS (MAR 1992 SAS)
(Ref. DFARS 52.236-7000)

When submittals of Cost Estimate Proposals are required for additions or deletions to work under this contract by modification, the Contractor shall use DA Form 5418-R titled "Cost Estimate Analysis" (see Attachment 1 to SECTION 00800). A separate assemblage will be prepared for submittal by each trade affected by the proposed work.

(End of clause)

52.244-4001 KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS –
AUG 1997

In connection with the services covered by this contract, any in-house personnel, subcontractors, and outside associates or consultants will be limited to the individuals or firms that were specifically identified and agreed to during negotiations. The contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants.

(End of Clause)

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract

requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

(End of clause)

52.246-4001 WARRANTY OF CONSTRUCTION WORK – AUG 1997

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (1) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall contain for a period of year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of –

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, or workmanship.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall –

(1) Obtain all warranties that would be given in normal commercial practice:

(2) Require all warranties to be executed, in writing for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of Clause)

52.248-4003 VALUE ENGINEERING AFTER AWARD

61 In reference to Contract Clause 52.248-3, "Value Engineering – Construction", the Government may refuse to entertain a "Value Engineering Change Proposal" (VECP) for those "performance oriented" aspects of the Solicitation documents which were addressed in the Contractor's accepted contract proposal and which were evaluated in competition with other offerors for award of this contract.

62 The Government may consider a VECP for those "prescriptive" aspects of the Solicitation documents, not addressed in the Contractor's accepted contract proposal or addressed but evaluated only for minimum conformance with the Solicitation requirements.

63 For purposes of this clause, the term "performance oriented" refers to those aspects of the design criteria or other contract requirements which allow the Offeror or Contractor certain latitude, choice of and flexibility to propose in its accepted contract offer a choice of design, technical approach, design solution,

construction approach or other approach to fulfil the contract requirements. Such requirements generally tend to be expressed in terms of functions to be performed, performance required or essential physical characteristics, without dictating a specific process or specific design solution for achieving the desired result.

- 64 In contrast, for purposes of this clause, the term “prescriptive” refers to those aspects of the design criteria or other Solicitation requirements wherein the Government expressed the design solution or other requirements in terms of specific materials, approaches, systems and/or processes to be used. Prescriptive aspects typically allow the Offerors little or no freedom in the choice of design approach, materials, fabrication techniques, methods of installation or other approach to fulfill the contract requirements.
- (End of Clause)

52.249-4001 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (APR 1991 OCE)
(Ref. FAR 52.249-10)

(a) This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause entitled DEFAULT (FIXED-PRICE CONSTRUCTION). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

(b) The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY WORKDAYS BASED ON 5-DAY WORK WEEK											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
9	8	6	4	4	6	9	7	5	3	4	8

(c) Upon acknowledgment of the Notice to Proceed and continuing through-out the contract, the Contractor will record on the daily Contractor Quality Control report the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day in each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph (b) above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather workdays, and issue a modification in accordance with the contract clause entitled DEFAULT (FIXED PRICE CONSTRUCTION).

(End of clause)

52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS - EFARS

Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

- (1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.

(2) If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.
(End of Clause)

ATTACHMENT 1 TO SECTION 00800

LIST OF ATTACHMENTS

1. Contract Drawings:
File No. 730-17-01, Sheets 1 through 21
2. Rates of Wages:
3. Formats:
Army Project Sign
Army Project Sign Legend Defined
Project Sign Erection Detail
Corps of Engineers Logo
Accident Prevention Plan (Ref. FAR 52.236-13 and EM 385-1-1)
Construction Quality Control Report
Small and Disadvantaged Business Subcontracting Plan
Weekly Temporary Electrical Inspection
4. Minimum Standard for Temporary Electrical Service (Ref. FAR 52.236-14)
5. Forms:
SAS Form 9 - Activity Hazard Analysis
SAD Form 1666a-R - Safety Checklist for Crawler, Truck & Wheel Mounted Cranes
SAD Form 1666b-R - Safety Checklist for Portal, Tower, and Pillar Cranes
SAD Form 1666c-R - Safety Checklist for Rigging
SAD Form 1666d-R - Safety Checklist for Motor Vehicles, Trailers and Trucks
SAD Form 1666e-R - Safety Checklist for Crawler Tractors and Dozers
SAD Form 1666f-R - Safety Checklist for Scrapers, Motor Graders, and Other Mobile Equipment
SAD Form 1666g-R - Safety Checklist for Material Hoists
SAD Form 1666h-R - Safety Checklist for Earth Drilling Equipment
ENG Form 4025 - Transmittal of Shop Drawings, Equipment Data, Material Samples, or Manufacturer's Certificates of Compliance
DA Form 5418-R - Cost Estimate Analysis
DD Form 1354 - Transfer and Acceptance of Military Real Property
Standard Form LLL-A - Disclosure of Lobbying Activities

FB (ENG) Form 51 - Real Property Inventory and BIS Worksheet

General Decision Number GA030001

General Decision Number GA030001

Superseded General Decision No. GA020001

State: **Georgia**

Construction Type:

BUILDING

County(ies):

CHATTAHOOCHEE MUSCOGEE

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number Publication Date

0

06/13/2003

COUNTY(ies):

CHATTAHOOCHEE MUSCOGEE

SUGA1001D 11/22/1993

	Rates	Fringes
BRICKLAYER/BLOCKLAYER	12.15	
CARPENTER (including batt insulation, drywall hanging, and metal framing)	9.77	
CEMENT MASON/CONCRETE FINISHER	8.35	
ELECTRICIAN	12.76	2.83
HVAC MECHANIC (duct work only)	12.00	
LABORERS:		
Unskilled	5.65	
Pipelayer	6.50	.13
PAINTER, BRUSH (does not include drywall finishing)	8.38	
PLASTERER	10.00	
PLUMBER (including HVAC piping)	12.31	
POWER EQUIPMENT OPERATORS;		
Backhoe	8.04	
Bulldozer	8.47	
Loader	7.80	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination

- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210


The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

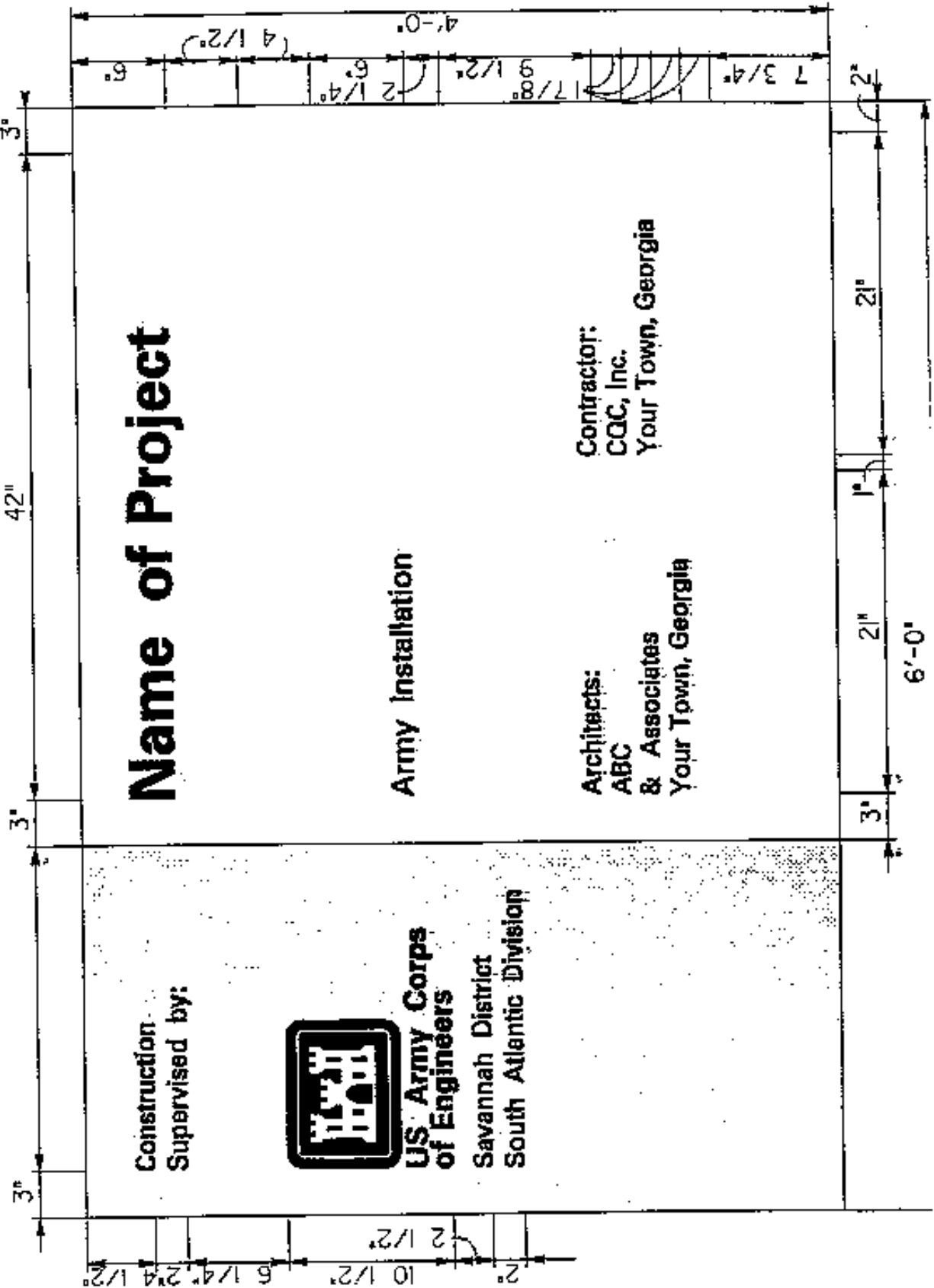
3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:


Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210


4.) All decisions by the Administrative Review Board are final.


END OF GENERAL DECISION


<p>Construction Supervised by:</p>	 <p>US Army Corps of Engineers</p>	<p>Savannah District South Atlantic Division</p>	<p>Name of Project</p>
<p></p>	<p>Army Installation</p>	<p>Architects: ABC & Associates Your Town, Georgia</p>	<p>Contractor: CQC, Inc. Your Town, Georgia</p>





<p>Construction Supervised by:</p> <div style="text-align: center;">  <p>US Army Corps of Engineers Savannah District South Atlantic Division</p> </div>	<div style="text-align: center;"> <h1 style="margin: 0;">Name of Project</h1> <h2 style="margin: 20px 0 0 0;">Army Installation</h2> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>Architects: ABC & Associates Your Town, Georgia</p> </div> <div style="width: 45%;"> <p>Contractor: CQC, Inc. Your Town, Georgia</p> </div> </div> </div>
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<p>Construction Supervised by:</p>	 <p>US Army Corps of Engineers</p>	<p>Savannah District South Atlantic Division</p>	<p>Name of Project</p>
<p>3"</p>	<p>3"</p>	<p>Army Installation</p>	<p>Contractor: CQC, Inc. Your Town, Georgia</p>
<p>3"</p>	<p>3"</p>	<p>Architects: ABC & Associates Your Town, Georgia</p>	<p>Architects: ABC & Associates Your Town, Georgia</p>
<p>3"</p>	<p>3"</p>	<p>3"</p>	<p>3"</p>

<p>Construction Supervised by:</p>	 <p>US Army Corps of Engineers</p>	<p>Savannah District South Atlantic Division</p>	<p>Name of Project</p>
<p>3"</p>	<p>3"</p>	<p>Army Installation</p>	<p>Contractor: CQC, Inc. Your Town, Georgia</p>
<p>3"</p>	<p>3"</p>	<p>Architects: ABC & Associates Your Town, Georgia</p>	<p>Architects: CQC, Inc. Your Town, Georgia</p>
<p>3"</p>	<p>3"</p>	<p>3"</p>	<p>3"</p>

<p>Construction Supervised by:</p> <div style="text-align: center;">  <p>US Army Corps of Engineers Savannah District South Atlantic Division</p> </div>	<div style="text-align: center;"> <h1 style="margin: 0;">Name of Project</h1> <h2 style="margin: 20px 0 0 0;">Army Installation</h2> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p>Architects: ABC & Associates Your Town, Georgia</p> </div> <div style="width: 45%;"> <p>Contractor: CQC, Inc. Your Town, Georgia</p> </div> </div> </div>
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PROJECT SIGN LEGEND DEFINED

Legend Group 1: The words:

"Construction Supervised by:"	or	"Design and Construction Supervised by:"
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shall be placed on two lines using black, 1.25" Helvetica regular typeface. Maximum line length is 19".

10.5" Reverse Signature: The Corps symbol shall be a 10.5" white reverse signature using a 6" castle on a red background. The castle and surrounding border lines shall be white. The castle windows, door, and logo background are to be red. The words "U.S. Army Corps of Engineers" shall be black.

Legend Group 2: The words:

"Savannah District
South Atlantic Division"

shall be placed on two lines below the 10.5" reverse signature, using black, 1.25" Helvetica regular typeface.

Legend Group 3: The "Name of Project" shall be placed on one to three lines using white 3" Helvetica bold typeface. Maximum line length is 42".

Legend Group 4: The "Army Installation" shall be a one or two line identification of the facility or name of the sponsoring department. Lettering is to be white, 1.5" Helvetica regular typeface. Maximum line length is 42".

NOTE: Cross-align the first line of legend group 4 with the first line of the Corps signature (U.S. Army Corps) as shown.

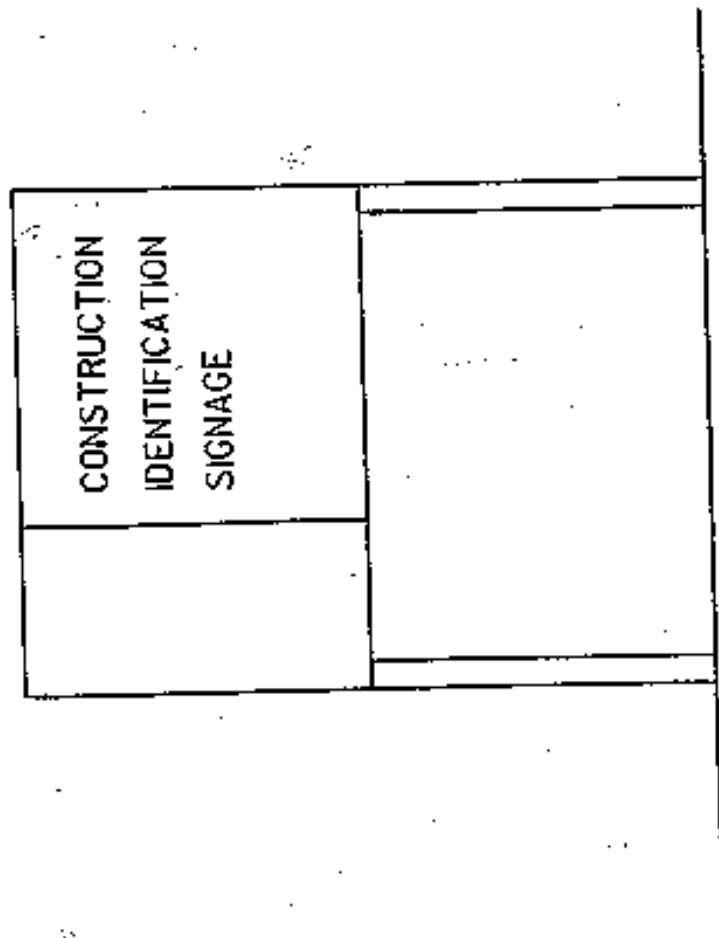
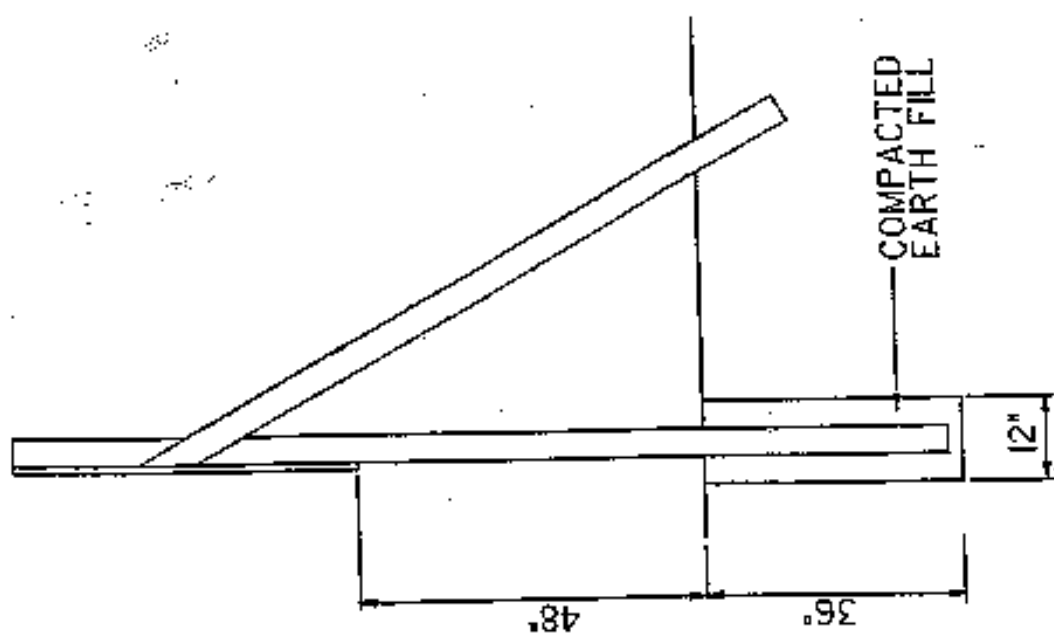
Legend Group 5a: The words:

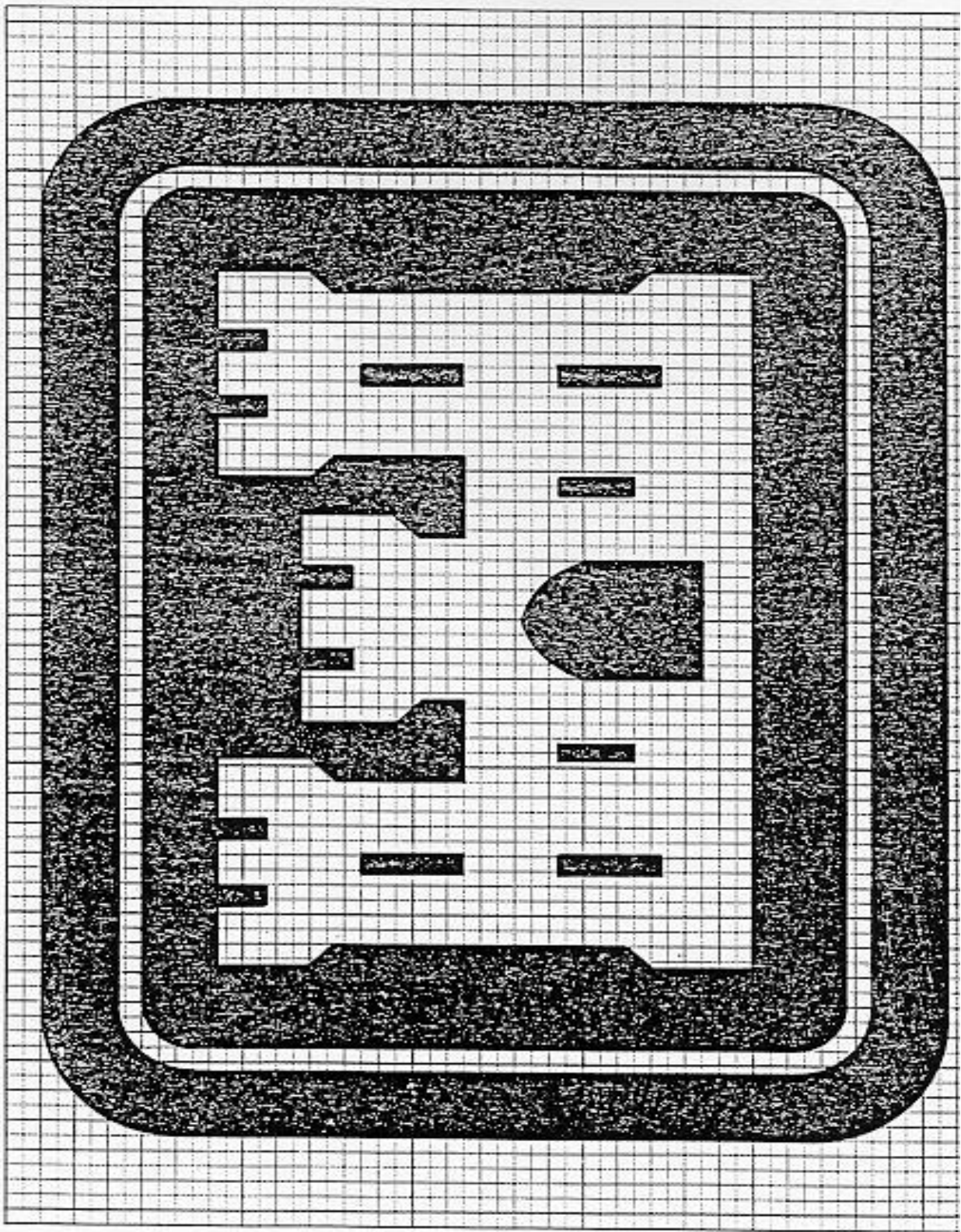
"Architects:" or "Engineers:" or "Architect-Engineers:"

shall be a one to five line identification of the prime architect or engineering corporate or firm name, city, and State. Lettering shall be white, 1.25" Helvetica regular typeface. Maximum line length is 21".

Legend Group 5b: The "Contractor:" shall be a one to five line identification of the prime Contractor corporate or firm name, city, and State. Include type of Contractor, i.e. General Contractor, etc. Lettering shall be white, 1.25" Helvetica regular typeface. Maximum line length is 21".

NOTE: All typography shall be flush left and rag right, upper and lower case with initial capitals only as shown.





CORPS OF ENGINEERS LOGO
HALF SIZE

FORMAT
(Ref. FAR 52.236-13 and EM 385-1-1 dated 3 Sep 96)
ACCIDENT PREVENTION PLAN

MINIMUM BASIC OUTLINE FOR ACCIDENT PREVENTION PLAN

An accident prevention plan is, in essence, a safety and health policy and program document. The following areas are typically addressed in an accident prevention plan, but a plan shall be job specific and shall also address any unusual or unique aspects of the project or activity for which it is written. The accident prevention plan shall interface with the employer's overall safety and health program. Any portions of the overall safety and health program that are referenced in the accident prevention plan shall be included as appropriate.

1. SIGNATURE SHEET. Title, signature, and phone number of the following:

- a. Plan preparer (corporate safety staff person, QC);
- b. Plan approval, e.g., owner, company president, regional vice president (HTRW activities require approval of a Certified Industrial Hygienist (or qualified Industrial Hygiene personnel for in-house USACE activities; a Certified Safety Professional (or qualified USACE safety personnel for in-house work) may approve the plan for operations involving UST removal where contaminants are known to be petroleum, oils, or lubricants);
- c. Plan concurrence (provide concurrence of other applicable corporate and project personnel (contractor)), e.g., Corporate Chief of Operations, Corporate Chief of Safety, Corporate Industrial Hygienist, project manager or superintendent, project safety professional, project QC. The plan will be developed by qualified personnel (plan preparer) and will be signed by a competent person (plan concurrence) and a representative of the prime contractor's project management team (plan approval).

2. BACKGROUND INFORMATION. List the following:

- a. Contractor;
- b. Contract number;
- c. Project name;
- d. Brief project description, description of work to be performed, and location (map);
- e. Contractor accident experience (provide information such as EMR, OSHA 200 Forms, corporate safety trend analyses);
- f. Listing of phases of work and hazardous activities requiring activity hazards analyses.

3. STATEMENT OF SAFETY AND HEALTH POLICY. (In addition to the corporate policy statement, a copy of the corporate safety program may provide a

significant portion of the information required by the accident prevention plan.)

4. RESPONSIBILITIES AND LINES OF AUTHORITIES.

a. Identification and accountability of personnel responsible for safety - at both corporate and project level (contracts specifically requiring safety or industrial hygiene personnel should include a copy of their resume - the District Safety and Occupational Health Office will review the qualifications for acceptance). For items in EM 385-1-1 which require the use of a competent person or a qualified person, the contractor is to maintain documentation demonstrating the competence or qualification of that individual.

b. Lines of authority

5. SUBCONTRACTORS AND SUPPLIERS. Provide the following:

- a. Identification of subcontractors and suppliers (if known);
- b. Means for controlling and coordinating subcontractors and suppliers;
- c. Safety responsibilities of subcontractors and suppliers.

6. TRAINING.

a. List subjects to be discussed with employees in safety indoctrination.

b. List mandatory training and certifications which are applicable to this project (e. g., explosive actuated tools, confined space entry, crane operator, diver, vehicle operator, HAZWOPER training and certification, personal protective equipment) and any requirements for periodic retraining/recertification.

c. Identify requirements for emergency response training.

d. Outline requirements (who attends, when given, who will conduct etc.) for supervisory and employee safety meetings.

e. Identify location at the project site where the records will be maintained.

7. SAFETY AND HEALTH INSPECTIONS. Provide details on:

a. Who will conduct safety inspections (e.g., project manager, safety professional, QC, supervisors, employees, etc.), when inspections will be conducted, how the inspections will be recorded, deficiency tracking system, follow-up procedures, etc;

b. Any external inspections/certifications which may be required (e.g., Coast Guard).

8. SAFETY AND HEALTH EXPECTATIONS, INCENTIVE PROGRAMS, AND COMPLIANCE.

a. The company's written safety program goals, objectives, and accident experience goals for this contract should be provided.

b. A brief description of the company's safety incentive programs (if any) should be provided.

c. Policies and procedures regarding noncompliance with safety requirements (to include disciplinary actions for violation of safety requirements) should be identified.

d. Provide written company procedures for holding managers and supervisors accountable for safety.

9. ACCIDENT REPORTING. The contractor shall identify who shall complete the following, how, and when:

- a. Exposure data (man-hours worked);
- b. Accident investigations, reports and logs;
- c. Immediate notification of major accidents.

10. MEDICAL SUPPORT. Outline on-site medical support and off-site medical arrangements.

11. PERSONAL PROTECTIVE EQUIPMENT. Outline procedures (who, when, how) for conducting hazard assessments and written certifications for use of personal protective equipment.

12. PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL (as applicable).

- a. Hazard communication program (01.B.04);
- b. Emergency response plans:
 - procedures and tests (01.E.01)
 - spill plans (01.E.01, 06.A.02)
 - fire fighting plan (01.E.01, 19.A.04)
 - posting of emergency telephone numbers (01.E.04)
 - wildfire prevention plan (09.K.01)
 - man overboard/abandon ship (19.A.04)
- c. Layout plans (04.A.01);
- d. Respiratory protection plan (05.E.01);
- e. Health hazard control program (06.A.02);
- f. Lead abatement plan (06.B.05 & specifications);
- g. Asbestos abatement plan (06.B.05 & specifications);
- h. Abrasive blasting (06.H.01);
- i. Confined space (06.1);
- j. Hazardous energy control plan (12.A.07);
- k. Critical lift procedures (16.C.17);

- 1. Contingency plan for severe weather (19.A.03);
- m. Access and haul road plan (22.1.10);
- n. Demolition plan (engineering and asbestos surveys) (23.A.01);
- o. Emergency rescue (tunneling) (26.A.05);
- p. Underground construction fire prevention and protection plan (26.D.01);
- q. Compressed air plan (26.1.01);
- r. Formwork and shoring erection and removal plans (27.B.02);
- s. Lift slab plans (27.D.01);
- t. SHP and SSHP (for HTRW work an SSHP must be submitted and shall contain all information required by the accident prevention plan - two documents are not required (28.B.01);
- u. Blasting plan (29.A.01);
- v. Diving plan (30.A.13);
- w. Plan for prevention of alcohol and drug abuse (Defense Federal Acquisition Regulation Supplement Subpart 252.223-7004, Drug-Free Work Force).

13. The Contractor shall provide information on how they will meet the requirements of major sections of EM 385-1-1 in the accident prevention plan. Particular attention shall be paid to excavations, scaffolding, medical and first aid requirements, sanitation, personal protective equipment, fire prevention, machinery and mechanized equipment, electrical safety, public safety requirements, and chemical, physical agent, and biological occupational exposure prevention requirements. Detailed site-specific hazards and controls shall be provided in the activity hazard analysis for each phase of the operation. Site-specific hazards are those hazards which would be reasonably be anticipated to occur on the construction site of concern and will be identified through analysis of the activities to be performed. The controls are measures which will be implemented by the contractor to eliminate or reduce each hazard to an acceptable level.

F O R M A T

CONTRACTOR'S NAME
(Address)

CONSTRUCTION QUALITY CONTROL REPORT

Date: _____ Report No. _____

Contract No.: _____

Description and Location of Work: _____

WEATHER: (Clear)(P. Cloudy)(Cloudy); Temperature: ____Min, ____Max;
Rainfall ____Inches

Contractor/Subcontractors and Area of Responsibility

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____
- h. _____

1. Work Performed Today:

(Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in table above.)

2. Results of Control Activities:

(Indicate whether: P-Preparatory, I-Initial, or F-Followup and include satisfactory work completed or deficiencies with action to be taken.)

3. Test Required by Plans and/or Specifications Performed and Results of Tests:

4. Monitoring of Materials and Equipment:

5. Offsite Surveillance Activities:

6. Job Safety:

(Daily comment required.)

7. Remarks:

- a. (Cover any conflicts in plans, specifications or instructions.)
- b. (Action taken in review of submittal.)
- c. (Verbal instructions received.)

Inspector

CONTRACTOR'S VERIFICATION:

The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Contractor's Approved
Authorized Representative

SAMPLE

SMALL AND DISADVANTAGED BUSINESS SUBCONTRACTING PLAN

BETTER BUILDERS, INC.

DATE: February 11, 2003

SOLICITATION NO. DACA21-0X-X-XXXX

TITLE: Barracks Complex, Fort Swampy, Georgia

Type of Work: Design and Construction

In accordance with applicable contract clauses of the solicitation noted above, Better Builders, Inc. submits the following Small Business Subcontracting Plan (includes small, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns).

It is company policy to follow all public laws including P.L. 99-661, Section 1207, P.L. 100-180, Section 806, P.L. 105-135 and P.L. 106-50. We have informed all purchasers to follow these laws in hiring subcontractors and buying materials.

1. The following goals (expressed in terms of percentages of the total dollars available for subcontract/purchase order award) would be applicable to a contract awarded under the cited solicitation. You must also provide the dollar amounts for each of the goals listed below.
 - a. Total Proposed Contract Amount: \$26,961,000
 - b. Total amount available for Subcontract award: \$18,300,000
 - c. Large Business: \$7,832,400 – 42.8%
 - d. Total amount to be subcontracted to all small business: \$10,467,600 - 57.2%
 - e. Small Disadvantaged Business: \$1,628,700 – 8.9%
 - f. Women-Owned Small Business: \$1,482,300 – 8.1%
 - g. Service-Disabled Veteran-Owned Small Business: \$549,000 - 3%
 - h. HUBZone Small Business: \$549,000 – 3%

- i. There are no options in this solicitation. *(NOTE: If there are options in the solicitation you must provide the same information as listed in paragraph 1 a-h for each option year/period.)*
- j. Indirect and overhead costs have not been included in the goals specified in this section for amounts available for subcontract/purchase order award.
- k. Consideration was given to HCBU/MI's but no opportunities were found to be included in the small disadvantaged business goals.

NOTE: While Savannah District does not have a specific goal for subcontracting with Veteran-Owned small business, it must be addressed in any subcontracting plan. However, FAR 52.219-9 requires a goal in your subcontracting plan for Veteran-Owned small business concerns.

- 2. The following principal products and/or services will be subcontracted under this contract, and the distribution among all small business concerns are as follows:

Large Business - Earthwork

Small Business - Windows and Storm Doors, Recreation, Site Utilities Plumbing

Veteran Owned Small Business – Materials, Equipment

Service Disabled Veteran Owned Small Business – Asphalt, Electrical, Doors

HUBZone Small Business - Window Treatment, HVAC, Concrete

Small Disadvantaged Business - Vinyl Siding, Insulation, Gutters

Women Owned Small Business – Carpentry, Ceramic Tile, Fencing

NOTE: Company names should be provided for each product and/or service listed.

The following method was used in developing our subcontracting goals: (1) all areas of potential subcontract work were determined to be available for subcontract award to all types of small business concerns, and (2) will be actively recruited for participation through the many sources described hereinafter.

- 3. The following individual will administer this Subcontract Plan on behalf of Better Builders, Inc.:

Name: Freddie Better

Title: Executive Vice President

Address and Telephone Number: 4845 Tonka Drive
Fair Haven, CT 27413
800-621-4845

The individual's specific duties with regard to the conduct of our firm's Subcontracting Plan will include, but will not be limited to the following:

a. Developing and maintaining bidders lists of all types of small business concerns using sources such as the Pronet System developed by the Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, Local Minority Business Development Centers and Minority Contractor Associations, and the General Business Services Center in the project's Standard Metropolitan Statistical Area.

b. Assuring the inclusion of all types of small business concerns in all solicitations for products or services which they are capable of providing; and ensuring that all solicitations are structured to permit the maximum possible participation by all types of small business concerns.

c. Establishing and maintaining records of all solicitations and subcontract awards to all types of small business concerns to ensure that the members of the firm who review bidders proposals document their reasons for selecting or not selecting a bid.

d. Preparing and submitting the Subcontracting Report for Individual Contracts (SF 294) and the Summary Subcontract Report (SF 295) in accordance with the instructions provided on the forms, and coordinating and preparing for all compliance reviews by Federal agencies.

e. Conducting or arranging for all other activities necessary to further the intent and attainment of goals of the Plan to include motivational training of the firm's purchasing personnel attendance at workshop, seminars and trade fairs conducted by or on behalf of all types of small business concerns, and general cooperation with members of these concerns or their representatives.

4. The following steps will be taken to ensure that all types of small business concerns receive notice and have an equitable opportunity to compete for intended awards of subcontracts and/or purchase orders for the products and/or services described in paragraph 2 above:

a. Sources will be requested through the SBA's ProNet system, business development organizations, small business trade associations and at small business procurement conferences; sources will be contacted and bidding materials will be provided to all responding parties with interest.

b. Internally, motivational training will be conducted to guide and encourage purchasing personnel; source lists and guides to all types of small business concerns will be maintained and utilized by purchasing personnel while soliciting subcontracts and purchase orders; activities will be monitored to ensure sufficient time is allowed for interested bidders to prepare their bids and to evaluate continuing compliance with this Subcontracting Plan.

5. Better Builders, Inc. agrees that the clause entitled "Utilization of Small Business Concerns" will be included in all subcontracts which offer further subcontracting opportunities. All subcontractors, except small business concerns, who receive subcontracts in excess of \$500,000 (\$1,000,000 in the case of construction) will be required to adopt and comply with a subcontracting plan similar to this one. Such plans will be reviewed to assure that all minimum requirements of an acceptable subcontracting plan have been satisfied.

The acceptability of goals shall be determined on a case-by-case basis depending on the supplies/services involved, the availability of all potential small business and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports or, as time and availability of funds permit, periodic visits to subcontractor's facilities to review applicable records and subcontracting program progress.

6. Better Builders, Inc. agrees to submit such periodic reports and cooperate in any studies or surveys as may be required by the Contracting agency or the Small Business Administration in order to determine the extent of compliance by the offeror with the subcontracting plan and with the clause entitled "Utilization of Small Business Concerns" contained in the solicitation.

7. Better Builders, Inc. agrees to maintain at least the following types of records to document compliance with this Subcontracting Plan:

a. The names of all organizations, agencies, and associations contacted for all small business sources, along with records of attendance at conferences, seminars and trade fairs where additional sources were developed.

b. Source lists, guides, and other data identifying all types of small business concerns

c. Records on all subcontract solicitations, on a contract-by-contract basis, indicating (1) whether all types of small business concerns were solicited, and if not, why not; and (2) the reasons for the failure of all solicited small businesses to receive a subcontract award.

d. Records of all subcontract award data, to include subcontractor's name and address, to be kept on a contract-by-contract basis.

e. Minutes of internal motivational and training meetings held for the guidance and encouragement of purchasing personnel, and records of all monitoring activities performed for compliance evaluation.

f. Copies of SF 294 and SF 295 showing date and place of filing and copies of all other reports or results of reviews conducted by the contracting agency or other interested agencies of the Federal government to monitor our compliance with this Subcontracting Plan.

In closing Better Builders, Inc. states that it will be the policy of Better Builders, Inc. to afford every practicable opportunity to all types of small business concerns to participate in construction contracts awarded to Better Builders, Inc. by the Federal Government to ensure that equitable opportunity is provided to all types of small business concerns to compete for award of subcontracts and purchase orders, and to diligently pursue the achievement of our goals by participation of all types of small business concerns in the dollars available for subcontract/purchase order award under the solicitation.

BY _____

DATE _____

Signature

Title, and Company Name

Contract Specialist

DATE _____

Approval Recommended

SADBU

DATE _____

Approve/Disapprove

Contracting Officer

DATE _____

Approve/Disapprove

Procurement Center Representative
Small Business Administration

DATE _____

WEEKLY TEMPORARY ELECTRICAL INSPECTION

Week ending _____

Contract No. _____

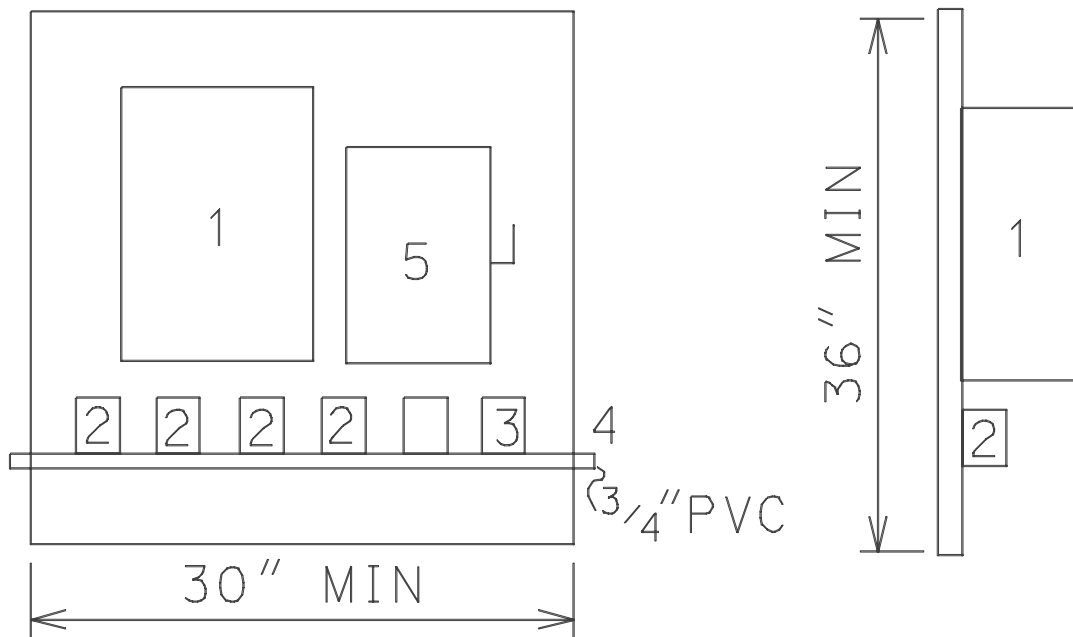
Contract Description _____

The following items were inspected in accordance with requirements in National Electrical Code and Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1.

1. Wire (size, type, condition).
2. Systems and devices (polarity, continuity of ground, resistance to ground).
3. Resistance of ground rods (25 OHMS) measured and recorded.
4. Check GFI for 15/20 amp 120 volt circuits.
5. Plugs and receptacles (type, NEMA rating).
6. Circuit breakers and disconnect (size, type, weatherproof).
7. Extension cords (type, UL listed, insulation condition, splices, location).
8. Open wiring on insulators, nonmetallic sheathed cable, outside clearance (600 volts or less), Festoon lighting (as applicable).

Signature Electrician/Electrical Engineer

MINIMUM STANDARD FOR TEMPORARY ELECTRICAL SERVICE



(DIMENSIONS ARE APPROXIMATE)

A. The backboard for temporary service shall consist of not less than 1/2 inch plywood of exterior grade.

B. Numbers above correspond to the item below:

Item 1 - NEMA 3R circuit breaker type panelboard. This panelboard shall consist of 1 two-pole 60 amp main circuit breaker, 4* one pole 20 AMP branch circuit breakers, and 1* two pole 20 AMP branch circuit breaker. Breakers shall meet Federal Specifications Standards for Class 1A breakers and shall be plug-in type. (*Number of breakers to be adjusted to suit the job requirements.)

Item 2 - Duplex grounding type convenience outlets in standard utility type outlet boxes with covers, meeting the NEC and NEMA requirements for wet locations. Connections to the branch circuit breakers shall be grounded by two conductors #12 NMC cable.

Item 3 - (Optional) A single three-conductor grounding type outlet rated for 250 volt service meeting the NEC and NEMA requirements for wet locations. Connections from this outlet to the two pole breaker shall be by two conductor grounded type NMC cable.

Item 4 - 3/4 inch PVC. This shall be used to support extension cords.

Item 5 - NEMA 3R service disconnect safety switch - 60 amp minimum.

C. The panelboard shall be grounded by #6 copper wire connected to a 3/4 inch by 10-foot long ground rod.

D. Service to the panel shall consist of three copper conductor #6 minimum service entrance cable. This cable may enter the top or side of the panelboard.

E. Periodic inspections of systems and devices will be made by the Contractor at intervals not to exceed 1 week, and a report will be submitted indicating the results.

F. All receptacle outlets that provide temporary electrical power during construction, remodeling, maintenance, repair, or demolition shall have ground-fault circuit-interrupter (GFCI) protection for personnel. GFCI protection shall be provided on all circuits serving portable electric hand tools or semi-portable electric power tools (such as block/brick saws, table saws, air compressors, welding machines, and drill presses). See EM 385-1-1 for exceptions.

G. Per EM 385-1-1 all temporary power distribution systems shall be submitted to the field office before installation.

ACTIVITY HAZARD ANALYSIS

1. Phase of Construction		
2. Location	3. Contract No.	4. Project
5. Prime Contractor	6. Date of Preparatory	7. Estimated Start Date
Potential Safety Hazard	Procedure to Control Hazard	
<div></div>		
8. Contractor's Representative (signature)	9.	

SAFETY CHECKLIST FOR CRAWLER, TRUCK & WHEEL MOUNTED CRANES

Contract # and title:			
Equipment name & number: owned or leased?			
Contractor:	Subcontractor:		
Contract Inspector:	Date inspected:		
	Yes	No	N/A
1. Unless the manufacture has specified an on-rubber rating, outriggers will be fully extended and down? (16.D.10)			
2. Are lattice boom cranes equipped with a boom angle indicator, load indicating device, or a load moment indicator? (16.D.01)			
3. Are lattice boom and hydraulic cranes equipped with a means for the operator to visually determine levelness? (16.D.02)			
4. Are lattice boom and hydraulic cranes, except articulating booms cranes, equipped with drum rotation indicators located for use for the operator? (16.D.03)			
5. Are lattice boom and hydraulic mobile cranes equipped with a boom angle or radius indicator within the operator's view? (16.D.04)			
6. Are lattice boom cranes, with exception of duty cycle cranes, equipped with an anti-two blocking device? (16.D.05)			
7. When duty cycle machines are required to make a non-duty lift, is the crane equipped with an international orange warning device and is a signal person present? (16.D 05)			
8. Are the following with the crane at all times: (16.C.02) <ul style="list-style-type: none"> a. the manufacturer's operating manual? b. the load rating chart? c. the crane's log book documenting use, maintenance, inspections and tests? d. operating manual for crane operator aids used on the crane. 			

	Yes	No	N/A
9. Are the following on the project site: a. completed periodic inspection report prior to initial work? (16.C.12) b. pre-operational checklist used for daily inspection? (16.C.12) c. written reports of the operational performance test? (16.C.13) d. written reports of the load performance test? (16.C.13)			
10. Are all operators physically qualified to perform work? (16.C.05)			
11. Are all operators qualified by written and practical exam or by appropriate licensing agency for the type crane they are to operate? (16.C.05)			
12. Is the crane designed and constructed IAW the standards listed in Table 16-1? (16.C.06)			
13. Is a hazard analysis for set-up and set-down available? (16.C.08)			
14. Are accessible areas within the swing radius of the rear of the crane barricaded? (16.C.09)			
15. Are there at least 3 wraps of cable on the drum? (16.C.10)			
16. Are the hoisting ropes installed IAW the manufacturer's recommendations? (16.C.10)			
17. Are critical lift plans available? (16.C.18)			
18. Are minimum clearance distance for high voltage lines posted at the operator's position? (11.E.04)			
19. Do older lattice boom cranes with anti-two block warning devices in lieu of anti-two block prevention devices have a written exemption? (16.D.05)			
20. Is the slow moving emblem used on all vehicles which by design move at 25 MPH or less on public roads? (08.A.04)			
21. Are all vehicles which will be parked or moving slower than normal traffic on haul roads equipped with a yellow flashing light or flasher visible from all directions? (16.A.13)			

	Yes	No	N/A
22. Is all equipment to be operated on public roads provided with: (16A.07) a. headlights? b. brake lights? c. taillights? d. back-up lights? e. front and rear turn signals?			
23. Are seat and seat belts provided for the operator and each rider on equipment? (16.A.07 and 16.B.08)			
24. Is all equipment with windshields equipped with powered wipers and defogging or defrosting devices? (16.A.07)			
25. Is the glass in the windshield or other windows clear and unbroken to provide adequate protection and visibility for the operator? (16.A.07, 16.B.10)			
26. Is all equipment equipped with adequate service brake system and emergency brake system? (16.A.18)			
27. Are areas on equipment where employees walk or climb equipped with platforms, footwalks, steps, handholds, guardrails, toeboards and non-slip surfaces? (16.B.03)			
28. Is all self propelled equipment equipped with automatic, audible, reverse signal alarms? (16.B.01)			
29. Is there a record of manufacturer's approval of any modification of equipment which affects its capacity or safe operation? (16.A.18)			
30. Are truck and crawler cranes attached to a barge or pontoon by a slack tiedown system? (16.F.06)			
31. Have the following conditions been met for land cranes mounted on barges or pontoons: (16.F.04) a. Have load ratings been modified to reflect the increased loading from list, trim, wave, and wind action? b. Are all deck surfaces above the water? c. Is the entire bottom area of the barge or pontoon submerged? d. Are tie downs available? e. Are cranes blocked and secured?			
32. Are all belts, gears, shafts, spindles, drums, flywheels, or other rotating parts of equipment guarded where is a potential for exposure to workers? (16.B.03)			

	Yes	No	N/A
33. Is the area where the crane is to work level, firm and secured? (16.A.10)			
34. Is a dry chemical or carbon dioxide fire extinguisher rated at least 5-B:C on the crane? (16.A.26)			
35. Are trucks, for truck mounted cranes, equipped with a working reverse signal alarm? (16.B.01)			
36. Is a signal person provided where there is danger from swinging loads, buckets, booms, etc.? (16.B.13)			
37. Is there adequate clearance from overhead structures and electrical sources for the crane to be operated safely? (16.C.09)			
38. Is there adequate lighting for night operations? (16.C.19)			
39. Has the the boom stop test on cable-supported booms been performed? (16.D.06)			
40. Is the boom disenaging device functioning as required? (16.D.06)			
41. Has all rigging and wire rope been inspected? (Section 15)			
Remarks:(Enter actions taken for all "no" answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR PORTAL, TOWER, AND PILLAR CRANES			
Contract # and Title:			
Equipment name & number: owned or leased?			
Contractor:		Subcontractor:	
Contract Inspector:		Date Inspected:	
	Yes	No	N/A
1. Are the following available: (16.E.02) a. written erection instructions? b. listing of the weight of each component? c. an activity hazard analysis for the erection? d. does the activity hazard analysis contain (1.) location of crane and adjacent structures? (2.) foundation design and construction requirements? (3.) clearance and bracing requirements?			
2. Is there a boom angle indicator within the operator's view? (16.E.04)			
3. Are luffing jib cranes equipped with: (16.E.05) a. shock absorbing jib stops? b. jib hoist limit switch? c. jib angle indicator visible to operator?			
4. If used, do rail clamps have slack between the point of attachment to the rail and the end fastened to the crane? (16E.06)			
5. Are the following with the crane at all times: (16.C.02) a. the manufacturer's operating manual? b. the load rating chart? c. the crane's log book documenting use, maintenance, inspections and tests? d. the operating manual for crane operational aids used on the crane?			

	Yes	No	N/A
6. Are the following on the project site: a. completed periodic inspection report prior to initial work? (16.C.12) b. pre-operational checklist used for daily inspections? (16.C.12) c. written reports of the operational performance tests? (16.C.13) d. written reports of the load performance tests? (16.C.13)			
7. Is every crane operator certified by a physician to be physically qualified to perform work? (16.C.05)			
8. Are all operators qualified by written and practical exam or by appropriate licensing agency for the type crane they are to operate? (16.C.05)			
9. Is the crane designed and constructed IAW the standards listed in Table 16-1? (16.C.05)			
10. Is a hazard analysis for set-up and set-down available? (16.C.08)			
11. Are there at least 3 wraps of cable on the drum? (16.C.10)			
12. Are the hoisting ropes installed IAW the manufacturer's recommendations? (16.C.10)			
13. Is there a record of manufacturer's approval of any modification of equipment which affects its capacity or safe operation? (16.A.07)			
5. Remarks: (Enter actions taken)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR RIGGING			
Contract # and title:			
Equipment name & number: owned or leased?			
Contractor		Subcontractor:	
Contractor inspector:		Date inspected:	
	Yes	No	N/A
1. Has all defective rigging been removed? (15.A.01)			
2. Is rigging stored properly? (15.A.01)			
3. Are running lines within 6.5' of the ground or working level guarded? (15.A.03)			
4. Are all eye splices made in an approved manner with rope thimbles? (sling eyes excepted) (15.A.04)			
5. Are positive latching devices used to secure loads? (15.A.05)			
6. Are all custom lifting accessories marked to indicate their safe working loads? (15A.07)			
7. Are all custom designed lifting accessories proof-tested to 125% of their rated load? (15.A.07)			
8. Are the following conditions met for wire rope: (15.B.01-09) a. Are they free of rust or broken wires? b. Are defective ropes cut up or marked as unusable? c. Do rope clips attached with U-bolts have the U-bolts on the dead end or short end of the rope? d. Are protruding ends of strands in splices on slings and bridles covered or blunted? e. Except for eye splices in the end of wires and for all endless wire rope slings, are all wire ropes used in hoisting, lowering, or pulling loads one continuous piece, free of knots or splices?			

<p>f. Do all eye splices have at least 5 full tucks?</p> <p>g. If used, are wedge sockets fastening attached without attached the dead end of the wire rope to the live rope?</p> <p>h. Are they free of eyes or splices formed by wire rope clips or knots?</p>	Yes	No	N/A
<p>9. Are the following conditions met for chain? (15.C.01-04)</p> <p>a. Are all chains alloyed?</p> <p>b. Do all coupling links or other attachments have rated capacities at least equal to that of the chain.</p> <p>c. Are makeshift fasteners restricted from use?</p>			
<p>10. Are the following conditions met for fiber rope: (15.D.01-07)</p> <p>a. Are all ropes protected from freezing, excessive heat or corrosive materials?</p> <p>b. Are all ropes protected from abrasion?</p> <p>c. Are splices made IAW manufacture's recommendations?</p> <p>d. Do all eye splices in manila rope contain at least 3 full tucks and do all short splices contain at least 6 full tucks (3 on each side of the centerline of the splice)?</p> <p>e. Do all splices in layed synthetic fiber rope contain at least 4 full tucks and do short splices contain at least 8 full tucks (4 on each side of the centerline of the splice)?</p> <p>f. Do the tails of fiber rope splices extend at least 6 rope diameters (for rope 1" diameter or greater) past the last full tuck?</p> <p>g. Are all eye splices large enough to provide an included angle of not greater than 60° at the splice when the eye is placed over the load or support?</p>			
<p>11. Are the following conditions met for all slings: (15.E.01-06)</p> <p>a. Is protection provided between the sling and sharp surfaces?</p> <p>b. Do all rope slings have minimum clear length of 40 times the diameter of component ropes between each end fitting or eye splice?</p> <p>c. Do all braided slings have a minimum clear length of 40 times the diameter of component ropes between each end fitting or eye splice?</p>			

SAD Form 1666c-R Previous editions may be used for contracts
Mar 97 reflecting the 1992 edition of EM 385-1-1.

d. Do all welded alloy steel chain slings have affixed permanent identification stating size, grade, rated capacity and manufacturer?	Yes	No	N/A
e. Is each synthetic web sling marked or coded to identify its manufacturer, rated capacities for each type hitch and the type material?			
12. Are drums, sheaves, and pulley smooth and free of surface defects? (15.F.01)			
13. Is the ratio of the diameter of the rigging and the drum, block sheave or pulley thread diameter such that the rigging will adjust without excessive wear, deformation, or damage? (15F.02)			
14. Have all damaged drums, sheaves and pulleys been removed from service? (15.F.04)			
15. Are all connections, fittings, fastenings, and attachments of good quality, proper size and strength, and installed IAW manufacturer's recommendations? (15.F.05)			
16. Are all shackles and hooks sized properly? (15.F.06 & .07)			
17. Are hoisting hooks rated at 10 tons or greater provided with safe handling means? (15.F.07)			
18. Do all drums have sufficient rope capacity? (15.F.08)			
19. Is the drum end of the rope anchored by a clamp securely attached to the drum in a manner approved by the manufacturer? (15.F.08)			
20. Do grooved drums have the correct groove pitch for the diameter of the rope and is the groove depth correct? (15.F.08)			
21. Do the flanges on grooved drums project beyond the last layer of rope at a distance of either 2" or twice the diameter of the rope, whichever is greater? (15.F.08)			
22. Do the flanges on ungrooved drums project beyond the last layer of rope a distance of either 2.5" or twice the diameter of the rope, which ever is greater.			

23. Are the sheaves compatible with the size of rope used and as specified by the manufacture? (15F.09)	Yes	No	N/A
24. Are sheaves properly aligned, lubricated, and in good condition? (15.F.09)			
25. When rope is subject to riding or jumping off a sheave, are sheaves equipped with cablekeepers? (15.F.09)			
26. Are eye bolts loaded in the plane of the eye and at angles less than 45° to the horizontal? (15.F.10)			
27. Remarks: (Enter actions taken for "no" answers.)			
Contractor inspector signature			
Contractor QC/safety/project manager signature			

SAFETY CHECKLIST FOR MOTOR VEHICLES , TRAILERS AND TRUCKS

Contract # and title:
owned or leased?

Equipment name & number:

Contractor:

Subcontractor:

Contractor inspector:

Date inspected:

	Yes	No	N/A
1. Are records of safety inspections of all vehicles available? (18.A.02)			
2. Are all vehicles to be operated between sunset and sunrise equipped with: (18.A.04) a. 2 headlights? b. taillights and brake lights? c. front and back turn signals? d. 3 emergency flares, reflective markers, or equivalent portable warning devices?			
3. Are vehicles, except trailers or semi-trailers having a gross weight of 5000 lbs or less, equipped with service brakes and manually operated parking brakes? (18.A.05)			
4. Are service brakes on trailers and semitrailers controlled from the driver's seat of the prime mover? (18A.06)			
5. Does the vehicle have: (18.A.06) a. a speedometer? b. a fuel gage? c. an audible warning device (horn)? d. a windshield & adequate windshield wiper? e. an operable defroster and defogging device? f. an adequate rearview mirror? g. a cab, cab shield, and other protection to protect the driver from the elements and falling or shifting materials? h. non-slip surfaces on steps? I. a power-operated starting device?			

	Yes	No	N/A
6. Is all the glass safety glass and is all broken or cracked glass replace? (18.A.07)			
7. Do trailers meet the following: (18A.08) a. Are all towing devices adequate for the weight drawn? b. Are all towing devices properly mounted? c. Are locking devices or a double safety system provided on every 5th wheel mechanism and tow bar arrangement to prevent accidental separation? d. Are trailers coupled with safety chains or cables to the towing vehicle? e. Are trailers equipped with the power brakes equipped with a break-away device which will lock-up the brakes in the event the trailer separates from the towing vehicle?			
8. Are all dump trucks:(18.A.10) a. equipped with a holding device to prevent accidental lowering of the body? b. equipped with a hoist lever secured to prevent accidental starting or tipping? c. equipped with means to determine (from the operator's position) if the dump box is lowered? d. equipped with trip handles for tailgates that allow the operator to be clear?			
9. Are all buses, trucks and combination of vehicles with a carrying capacity of 1.5 tons or more, to be operated on public roads equipped with: (18.A.11) a. 3 reflective markers? b. 2 wheel chocks for each vehicle? c. at least one 2A:10B:C fire extinguisher? d. at least two properly rated fire extinguishers (for vehicles carrying flammable cargo)? e. a red flag not less than 1 foot square.			
10. Is vehicle exhaust controlled so as not to present a hazard to personnel? (18.A.13)			
11. Are all rubber tired motor vehicles equipped with fenders or with mud flaps if the vehicle is not designed for fenders? (18.A.14)			

	Yes	No	N/A
12. Are all vehicles, except buses, equipped with seat belts? (18.B.02)			
13. Does all self-propelled construction and industrial equipment have a working reverse signal alarm? (16.B.01)			
14. Are all hot surfaces of equipment, including exhaust pipes or other lines, guarded or insulated to prevent injury or fire? (16.B.03)			
15. If an off the road vehicle, is it equipped with rollover protective structures? (16.B.12)			
16. Remarks: (Enter actions taken for "no" answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR CRAWLER TRACTORS AND DOZERS

Contract # and title:			
Equipment name & number: owned or leased?			
Contractor:		Subcontractor:	
Contractor inspector:		Date inspected:	
	Yes	No	N/A
1. Are initial and daily/shift inspection records available? (16.A.01& .02)			
2. Are only qualified operators assigned to operate mechanized equipment? (16.A.04)			
3. Are sufficient lights provided for night operations? (16.A.11)			
4. Is the unit shut down before refueling? (16.A.14)			
5. Does the unit have as a minimum a 5-B:C fire extinguisher? (16.A.26)			
6. Is there an effective, working reverse alarm? (16.B.01)			
7. Are moving parts, shafts, sprockets, belts, etc., guarded? (16.B.03 ,07, and 13)			
8. Is protections against hot surfaces, exhausts, etc., provided? (16.B.03 and .13)			
9. Are fuel tanks located in a manner to prevent spills or overflows from running onto engine exhaust or electrical equipment?			

10. Are exhaust discharges directed so they do not endanger person or obstruct operator vision?(16.B.05)	Yes	No	N/A
11. Are seat belts provided? (16B.08)			
12. Is protection (grills, canopies, screens) provided to shield operator from falling or flying objects? (16.B.10 and .11)			
13. Is roll over protection provided? (16.B.12)			
14. Remarks: (Enter actions taken for "no" answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR SCRAPERS, MOTOR GRADERS, AND OTHER MOBILE EQUIPMENT

Contract # and title:			
Equipment name and number: owned or leased?			
Contractor:		Subcontractor:	
Contractor inspector:		Date inspected:	
	Yes	No	N/A
1. Are initial and daily/shift inspection records available? (16.A.01 & .02)			
2. Are only qualified operators assigned to operate equipment? (16.A.04)			
3. Are sufficient lights provided for night operations? (16.A.11)			
4. Does the unit have as a minimum a 5-B:C fire extinguisher? (16.A.26)			
5. Is there an effective working reverse alarm? (16.B.01)			
6. Is the unit shut down for refueling? (16.A.14)			
7. Are moving parts, shafts, sprockets, belts, etc., guarded? (16.B.03, .07 and .13)			
8. Is protection against hot surfaces, exhausts, etc., provided? (16.B.03 and .13)			
9. Are fuel tanks located in a manner to prevent spills or overflow from running onto engine exhaust or electrical equipment? (16.B.04)			
10. Are exhaust discharges directed so they do not endanger persons or obstruct operator vision? (16.B.05)			

	Yes	No	N/A
11. Are seat belts provided for each person required to ride on the equipment? (16.B.08)			
12. Is protection (grills, canopies, screens) provided to shield operators from falling or flying objects? (16.B.10 and .11)			
13. Is roll over protection provided? (16.B.12)			
14. Is a safe means of access to the cab provided (steps, grab bars, non-slip surfaces)? (16.B.03)_			
15. Are adequate head and tail lights provided? (16.A.07)			
16. Have brakes been tested and found satisfactory? (16.A.07)			
17. Does the unit have an emergency brake which will automatically stop the equipment upon brake failure? Is this system manually operable from the drivers position? (16.A.07)			
18. Is all equipment with windshields equipped with powered wipers and defogging or defrosting system? (16.A.07)			
19. Are all vehicles which will be parked or moving slower than normal traffic on haul roads equipped with a yellow flashing light or flasher visible from all directions? (16.A.13)			
20. Is the slow moving emblem used on all vehicles which by design move at 25 MPH or less on public roads? (08A.04)			

21. Have air tanks been tested and certified? (20.A.01)	Yes	No	N/A
22. Is an air pressure gage in working condition installed on the unit? (20.A.12)			
23. Does the air tank have an accessible drain valve? (20.B.17)			
24. Remarks: (Enter action taken for all "no" answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager			

SAFETY CHECKLIST FOR MATERIAL HOISTS			
Contract # and title:			
Equipment name & number:			
Contractor:		Subcontractor:	
Contract Inspector:		Date inspected:	
	Yes	No	N/A
1. Are all hoist towers, masts, guys or braces, counterweights, drive machinery supports, sheave supports, platforms, supporting structures, and accessories designed by a licensed engineer? (16.K.02)			
2. Is a copy of the hoist operating manual available? (16.K.04)			
3. Do all floors and platforms have slip-resistant surfaces? (16.K.08)			
4. Are landings and runways adequately barricaded and is overhead protection provided where needed? (16.K.08)			
5. Are hoisting ropes installed IAW manufacturer's instructions? (16.K.10)			
6. Are operating rules posted at the hoist operator's station? (16.K.14)			
7. Are air powered hoists connected to an air supply of sufficient capacity and pressure to safely operate the hoist? (16.K.15)			
8. Are pneumatic hoses secured by some positive means to prevent accidental disconnection? (16.K.15)			
9. Remarks: (Enter actions taken for all "no" answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR EARTH DRILLING EQUIPMENT

Contract # and title:			
Equipment name & number:			
Contractor:		Subcontractor:	
Contractor inspector:		Date inspected:	
	Yes	No	N/A
1. Is a copy of the manual for all drilling equipment available? (16.M.01)			
2. Have all overhead electrical hazards and potential ground hazards been identified in a site layout plan and addressed in an activity hazard analysis? (16.M.02)			
3. Are MSDSs for all drilling fluids available? (16.M.05)			
4. Does the drilling equipment have 2 easily accessible emergency shut down devices (one for the operator and one for the helper)? (16.M.06)			
5. Is the equipment posted with a warning of electrical hazards? (16.M.06)			
6. Is there a spotter or an electrical proximity warning device available to ensure safe distances from power lines are maintained? (16.M.06)			
7. Remarks: (Enter actions taken for "no" answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager			

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE <i>(Read instructions on the reverse side prior to initiating this form)</i>	DATE	TRANSMITTAL NO.
---	------	-----------------

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: <input type="checkbox"/> THIS IS A NEW TRANSMITTAL <input type="checkbox"/> THIS IS A RESUBMITTAL OF TRANSMITTAL _____
-----	-------	--------------	--

SPECIFICATION SEC. NO. <i>(Cover only one section with each transmittal)</i>	PROJECT TITLE AND LOCATION	CHECK ONE: THIS TRANSMITTAL IS FOR <input type="checkbox"/> FIO <input type="checkbox"/> GOV'T. APPROVAL
--	----------------------------	---

ITEM NO.	DESCRIPTION OF ITEM SUBMITTED <i>(Type size, model number/etc.)</i>	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. <i>(See instruction no. 8)</i>	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE	VARIATION <i>(See instruction No. 6)</i>	FOR CE USE CODE
				SPEC. PARA. NO.	DRAWING SHEET NO.			
<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>	<i>e.</i>	<i>f.</i>	<i>g.</i>	<i>h.</i>	<i>i.</i>

REMARKS	I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated. <div>NAME AND SIGNATURE OF CONTRACTOR</div>
---------	---

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED <i>(List by Item No.)</i>	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE
---	--	------

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

- | | |
|---|---|
| A -- Approved as submitted. | E -- Disapproved (See attached). |
| B -- Approved, except as noted on drawings. | F -- Receipt acknowledged. |
| C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required. | FX -- Receipt acknowledged, does not comply
as noted with contract requirements. |
| D -- Will be returned by separate correspondence. | G -- Other (<i>Specify</i>) |

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY														Form Approved OMB No. 0704-0188			
PAGE OF PAGES																	
Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, Va 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.																	
1. FROM (Installation/Activity/Service and Zip code)			2. OPERATING UNIT		3. DISTRICT CODE		4. OPERATING AGENCY		5. DATE		6. JOB NUMBER		7. SERIAL NUMBER		8. CONTRACT NUMBER		
9. TO (Installation/Activity/Service and Zip code)			10. OPERATING UNIT		11. DISTRICT CODE		12. OPERATING AGENCY		13. ACCOUNTING NUMBER		14. ACCOUNTABLE OFFICE NUMBER		15. TYPE OF TRANSACTION <div style="display: flex; justify-content: space-between; font-size: x-small;"> <div>A. <input type="checkbox"/> NEW CONSTR. <input type="checkbox"/> EXISTING FAC. <input type="checkbox"/> CAPITAL IMP. <input type="checkbox"/> OTHER (Specify)</div> <div>B. <input type="checkbox"/> BENF/O <input type="checkbox"/> PHYSICAL COM. <input type="checkbox"/> FINAN. COM. <input type="checkbox"/> OTHER (Specify)</div> </div>			16. PROJECT NUMBER	
ITEM NO. 17	CATEGORY CODE 18	FACILITY (Category description) 19			NO. OF UNITS 20	TYPE 21	UNIT OF MEAS. 22	TOTAL QUANTITY 23		COST 24		DRAWING NUMBERS 25		REMARKS 26			
27.								28. ACCEPTED BY (Signature)						DATE			
TRANSFERRED BY (Signature)						DATE		TITLE (Post Engr./Base Civ. Engr./Navy Rep.)						29. PROPERTY VOUCHER NUMBER			
TITLE (Area Engr./Base Engr./DPWO)																	

30.

CONSTRUCTION DEFICIENCIES

31. REMARKS

INSTRUCTIONS

This form has been designed and issued for use in connection with the transfer of military real property between the military departments and to or from other government agencies. It supersedes ENG Forms 290 and 290B (formerly used by the Army and Air Force) and NAVDOCKS Form 2317 (formerly used by the Navy).

Existing instructions issued by the military departments relative to the preparation of the three superseded forms are applicable to this form to the

extent that the various items and columns on the superseded forms have been retained. Additional instructions, as appropriate, will be promulgated by the military departments in connection with any new items appearing hereon.

With the issuance of this DD form, it is not intended that the departments shall revise and reprint manuals and directives simply to show the number of this DD form. Such action can be accomplished through the normal course of revision for other reasons.

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

Approved by
OM
0348-0046

[illegible]

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

(b) Enter the full names of the individuals(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.

Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503.

**DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET**

Approved by
OM
0348-0046

Reporting Entity: _____ Page _____ of _____

REAL PROPERTY INVENTORY & BIS WORKSHEET

DESCRIPTION

DATA

Gross Area of Facility (UM-1_)	
Length X width X no. Floors	
Facility Dimensions:	
Main	
Offset	
Wings	
Type of Facility:	
___BLDG ___MISC STRUC	
___UTIL SYS ___SURF AREA	

Current Use (Admin; Stg; Bks; Dispensary, etc)	
Utilities Available: (Enter "X" if "No" in applicable column)	
Water (W)	
Electricity (E)	
Telephone (T)	
Heated by Space Heater (D)	
Heated by Plant Serving More Than One Bldg (M)	
Major Heat Source:	
Coal (C); Oil (O); Interruptible Gas w/fuel	
Oil (I); Natural Gas (G); LPG (L); Elec (Z)	
Cooling and Ventilation:	
Ventilation Exhaust Fans (V); Individual Direct	
Expansion A/C Units (U);	
Cooled by Chilled Water From:	
Reciprocating (K); Centrifugal (P)	
Absorbent (A)	
Cooled Air if Circulated by:	
Low velocity air from single or multiple zone	
(B); Fan Coil Unit (F); High velocity	
Air: Double Duct (J); Induction (K);	
No distribution (X)	
Number of Floors	
Fire Rating	

Building Fire Resistive Rating and Degree of Sprinkler Protection (Circle One):				
Un- Sprinkled	Pre-Action or Deluge	Sprinkled wet System	Sprinkled dry system	
1	5	W	D	Combustible
2	6	E	R	Unprotected noncombustible
3	7	T	Y	Protect/noncombustible (1hr
				Fire resistance)
4	8	S	P	Fire Resistive (2 hr or more
				fire resistive)

Construction Material Codes:	
Foundation From: Pile (PL) Slab (SL) Pier (PR)	
No Foundation (NF) Continuous Footing (CON)	
Foundation Material: Concrete Reinforced (CR) Wood (WD)	
Concrete Block (BK) Steel (ST) Concrete (CN) Masonry (MAS)	
Other _____	

DESCRIPTION **DATA**

Primary Structure Material: _____
Concrete Blk (BK)
Concrete Reinforced (CR)
Metal (MIL) Wood (WD)
Brick (BK)
Other _____

Secondary Structure: _____
See Pri for Material Code

Exterior Wall Material:
Wood (WD) Brick (BK)
Conc Blk (Blk) Cone (CN)
Steel (ST) Struc Tile (TIST)
Comb Brick & Wood.
ASB Shingle or Alum
Siding (CMB)

Interior Wall Material: _____
Masonite Paneling (MAP)
Plywood Paneling (PLP)
Plywood (PL)
Plaster Bd on Wood Fr (PBW)
Wood Sheathing (WDS)
Wood Wainscoting (WWS)
Other _____

Roof Deck Material:
No Roof Deck (0)
Metal (6)
Wood (Less than 2")(8)
Wood (2" of more)(9)
Reinforced Concrete (7)
Asphalt (3)
Other _____

Roof Surface Material: _____
Roofs, Composition (CPS)
Shingles, Comp (SC)
Built-up Gravel (BUG)

DESCRIPTION **DATA**

Air Conditioning: Type Code _____
& Capacity (BTU) _____
Window Unit (0)
Central Chilled Water (02)
Central Direct Expansion (03)
Evaporative Cooling (04)

Total Area A/C (SF) _____
Largest Exterior Doors: _____
Height (Tenths of Ft) _____

Utility Connections
Exterior (BLDGS only)

No. Size

WATER (POT)

SEWER, Sanitary

Volts _____
Electricity Ph Amps

GAS

STEAM

CONDENSATE

CHILL WATER

WATER (N-P)

Total Area (SF) by:

Foundation _____
Roof _____
Floors _____
Exterior Painting _____
Interior Painting _____

Other Utilities & Equipment:

Water Htrs:
Capacity _____
Temp Rise _____
Fuel _____

SECTION 01010

GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS

1. GENERAL

1.1 The Contractor shall design and construct the Chapel and Education Facility at Fort Benning, GA resulting in a complete and useable facility.

1.2 The scope of work for the Chapel and Education Facility, Fort Benning, Georgia, includes the design, site preparation and construction of one new building on a vacant and level site, an addition to the annex building of the existing chapel complex and other miscellaneous improvements on the site. Supporting facilities will include parking, concrete pavement, sidewalks, water, sewer, electrical service, fire alarm systems, storm drainage, erosion control measures, information systems, and landscaping. Interior design for furniture (including re-use of existing furniture if desired by the user) and finishes is included in the scope of work.

1.3 Sustainable Design

This project must be designed in accordance with the requirements for sustainable design features as measured through the use of Sustainable Project Rating Tool (SPiRiT), Appendix E. SPiRiT is a modified version of the U.S. Green Building Council LEED Green Building Rating System. As stated in the contract clauses each offeror will complete and submit the SPiRiT Facility Points Summary with the proposal; the total points score will determine the SPiRiT Sustainable Project Certificate Level: SPiRiT Bronze, Silver, Gold or Platinum. SPiRiT Requirements and Point Summary, Appendix F has been included for this purpose. The proposed level will be used as the second highest proposal evaluation factor as defined in the contract clauses. A minimum of Bronze level rating is required. However, sustainable design solutions beyond the bronze level may earn greater consideration if the proposal is within funds available for construction.

1.4 Site Development and Utilities

Site development will include all clearing, grading, roads, parking lots, landscaping, sidewalks, curbs and gutters and utilities for the complex.

1.5 Demolition

Demolition will include lead paint and asbestos abatement where the proposed Education Facility connects to the existing Annex building and removal of site improvements. Underground utilities will be capped as specified.

1.6 Facilities

The Chapel includes a 400-seat Sanctuary, a 200-seat space which can be opened to the Sanctuary to increase seating capacity or be used independently, a Nursery, 13 Classrooms, a commercial-type Kitchen, 4 Chaplain Offices, and support facilities. Some classrooms double as a Blessed Sacrament Room, Bride's Room, or Choir Room. The Education Facility includes 12 Classrooms, a Nursery, a commercial Kitchen, and support spaces. For both buildings, provide central monitoring and control capability, fully compatible with the existing installation Direct Digital Control energy monitoring and control system (EMCS). Heating (gas-fired) will be provided by stand-alone systems. All required anti-terrorism/ force protection measures will be incorporated into the facilities and grounds. The project will be designed in accordance with ADA.

1.7 There are Army Standard Designs for this project. The Chapel is based on the standard 400 seat Sanctuary design. The Education Facility is based on a standard design but has been extensively revise to meet the functional and historic requirements of the project.

1.8 Project design plans and specifications are in English inch-pound units of measurements. The site survey drawings provided are in English units, as are the Site Layout Plan and Floor Plan. The Offerors shall present their plans in English units of measure.

*3

1.9 Because of the construction cost limitation of ~~\$5,817,500~~6,281,752, proposers are encouraged to consider the following cost savings as part of their proposal. Proposers will be allowed to implement these measures to stay within the cost limitation. In consideration of the Government's desire to achieve a project within the funds available, the items have been prioritized to assist the proposer in determining which savings to incorporate into their proposal. It is up to the proposers to make the choices on which savings, if any, to incorporate. Item number 1 is the cost saving measure that the Government would like to see adopted first. Item 12 is the measure that the Government would like to see adopted last (the item the Government would most like to retain as shown in the Request For Proposal documents). The listing here does not preclude the proposers from taking any other cost saving measures allowed by this Request For Proposal. Implicit in the description of cost savings measure is the requirement to complete or modify any work affected by the execution of the cost savings measures in order to effect a workable final solution. If specifically mentioned in the description, the proposers shall substitute as directed. Otherwise the proposers are permitted to handle modifications at their discretion provided their choices fall within the parameters allowed by this Request For Proposal. The potential cost saving measures are as follows:

1. Provide concrete walkway and steps in-lieu-of the Breezeway as presently shown
2. Flush solid core doors l/o paneled at interior doors at the Education Facility.
3. Seeding in-lieu-of sodding
4. Delete one-half of landscaping plants
5. Delete concrete planter walls and precast concrete seats
6. Board fencing and wood gates in-lieu-of masonry screen walls with EIFS at the dumpster and equipment enclosure
7. Delete storage shed
8. Delete northernmost parking Lot
9. Painted gypsum board wall finish in-lieu-of wood paneling and trim at Sacrament Room
- ~~10. Provide partial Education Facility, omitting approximately 2,305 SF from the Base Bid~~
- ~~11. Provide partial Education Facility, omitting approximately 3,580 SF from the Base Bid~~
- ~~12. Omit Education Facility, complete, under Base Bid Item 02 (including renovation within the existing Annex Building) and site preparation and development associated with the Education Facility under Base Bid Item 03.~~
13. Provide partial Education Facility to include 6 classrooms and minor renovation work to existing facility in accordance with Amendment No. 0003 (ref. Plate A-08A).
14. Delete new southern parking lot. Delete demolition of existing parking area and sidewalk as shown on Plate C-06. Extend sidewalk from existing parking on, to southern entrance of Chapel. Mirror image chapel and turn-around drive (with sidewalk and bollards) about the chapel's east-west axis so that main entrance is facing north.

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15. Delete Storage Shed Building between Dumpster and Service Yard (Transformer and Chillers) leaving shared walls as described on Plate C-02.
16. Use PVC instead of cast iron below slabs.
17. Use single person for CQC, rather than primary plus mechanical and electrical
18. Delete 3 projection screens - 1 at each multi-purpose room and 1 over the raised platform.
19. Delete overhead projector system in conference room, activity center.
20. Delete landscape requirement for trees and shrubs and provide only sod and seeding.
21. Delete Breezeway at Ed Bldg
22. Delete the northern most parking lot, provide painted stripes on existing playground. Provide paving and curb and gutter from playground to access drive.
23. Reduce heavy duty paving by ½ . Access from Ingersoll Street to the dumpster area shall remain as heavy duty paving. Provide heavy duty paving to playground (noted in item 22 above). Eliminate portion of easternmost service driveway in front of service yard and reorient service yard to be accessed from remaining service drive.
24. Delete sidewalk that extends around the west façade of the Chapel building
25. Use heavy duty residential cabinet and counter finishes in the kitchen instead of commercial grade stainless steel finishes

2. DESIGN CRITERIA

2.1 The proposal documents shall include adequate information in the form of narratives, drawings, calculations, catalog cuts, etc., to enable the Government to adequately review the proposal. Proposal documents shall include all requirements listed in the contract clauses and compliance with the format requirements is encouraged to facilitate review and award.

2.2 The design, following award, will include a 60% and final design submittal and corrected final design submittals. See Section 01012, DESIGN AFTER AWARD.

2.3 The proposal drawings may be done with any CADD software. Once the contract is awarded all drawings will be initiated and done in Microstation version J or Version 8 software in accordance with A/E/C CADD Standards Manual which is available at: (<http://tsc.wes.army.mil/>). All building types will have a complete set of drawings. Common details used throughout will be copied to each set so that it can stand-alone. Stating that a building is a mirror image of another is not acceptable. Drawings for each building type will be grouped together so that it will be a complete set. Site development and utilities will naturally be in a separate set.

2.4 Codes, reference documents and criteria referenced within this RFP, although not attached, are an integral part of this RFP. Each proposer shall be responsible for securing any necessary reference at his own expense and resources. Requirements of this RFP may delete, revise, add to, or substitute for criteria contained in the referenced documents and this RFP shall be deemed the controlling authority of any changes to the other referenced documents and criteria.

2.5 Information provided in the appendices is intended to provide additional design requirements and information. Appendix A is References. Appendix B is Functional Room Requirements, a room-by-room summary of specific user requirements for functions within the new facility. Appendix C is the Fire Protection/Life Safety Code Analysis. Appendix D is the general Room Finish

Schedule. Appendix E is the Sustainable Project Rating Tool (SPiRiT) Appendix F is the SPIRiT Requirements and Point Summary Table. Appendix G contains the Interior Design Presentation Format. Appendix H is the Anti-Terrorism Standards for Buildings. Appendix I is Water Flow Tests. Appendix J contains Geotechnical Information. Appendix K is an edited version of the Army Chapel Standard Definitive Design. Appendix L is Fort Benning MP&E Preferences.

2.6 Drawings included in this RFP include a conceptual site plan, a floor plan, roof plan and elevations. The drawings represent a conceptual design that has been coordinated with and is acceptable to the User and Base Master Planning for functional relationships, working arrangements and aesthetic compatibility. While this does not imply that this is the only solution that will be considered or that would be acceptable, it is noted that the Users and Base Master Planning would prefer to maintain as much of the conceptual development as possible in the final design.

3. SPECIFICATION INTENT

The intent of these specification sections is to describe the requirements for quality, function, and materials, and types of construction in sufficient detail to enable engineering and design to be completed by the Contractor. In this specification section, each engineering and design discipline describes design intent and outlines the parameters to which the Contractor shall design.

3.1 Section 01012 DESIGN AFTER AWARD defines the design and performance criteria. The applicable building codes and standards shall be used as the minimum criteria to develop the construction documents unless more stringent criteria is defined for a specific area.

3.2 Section 01330 SUBMITTAL PROCEDURES (DESIGN BUILD) defines the format and submittal requirements in which the design and the construction documents shall be prepared by the Contractor.

4. COORDINATION BETWEEN THE VARIOUS DISCIPLINES

The Contractor shall be responsible for the coordination between design, engineering and construction disciplines in order to fulfill the requirements of this contract and to provide for a complete, integrated and functional design.

5. QUALITY OF WORK

Construction documents shall be sufficient to afford a clear understanding of the construction work required. The work shall be organized in a manner that will assure thorough coordination between the various details on the drawings, and between the drawings and the specifications. The Contractor shall cross-check all work until all conflicts have been reconciled. The US Army Corps of Engineers, Savannah District Design Manual, current edition, and Savannah District Guide Specifications are available on the Internet at: <http://en.usace.army.mil> under Engineering Criteria.

Unified Facility Guide Specifications (UFGS) are available on the internet at:

<http://www.hnd.usace.army.mil/TECHINFO/> or <http://www.ccb.org/ufgs/ufgs.htm>

SpecIntact software which is used to edit the guide specifications is available for free at the same site.

These specifications shall be used as the basis for format and preparation of construction documents.

6. DESIGN REQUIREMENTS

6.1 General

6.1.1 The project shall be designed and constructed in accordance with the criteria contained herein using industry standard materials and efficient practices. The Contractor shall use materials and equipment accepted within the construction industry. The building design and the materials selected shall be of high quality, durable and easily maintained.

6.1.2 The Contractor shall prepare complete construction documents for all work designed as required by the RFP. The construction documents to be prepared include, but are not limited to, construction drawings, specifications, submittals, and design analyses as required in Section 01012, Design After Award and 01330 Submittal Procedures (Design Build). The Contractor's Designers of Record shall develop construction document technical specifications for all areas of work. The design documents shall be provided in English units (refer to specification section 01415 METRIC MEASUREMENTS).

6.1.3 The Contractor shall be responsible for the professional quality, code compliance, technical accuracy and coordination of all designs, drawings, specifications and other documents or publications upon which the design and construction are based. In projects having multiple buildings, each building shall have its own complete set of drawings. Drawings will not be cross-referenced between building types. Copy common details to each set. Stating that this building is a mirror of another is not acceptable either. Create a complete set of drawings for that building.

6.1.4 The project specifications shall be prepared using UFGS guide specifications. If there is more than one UFGS guide specification for the same construction element, use the one with an "A" suffix. If a UFGS guide specification cannot be found, contact the Savannah District to see if a guide specification exists. If a guide specification does not exist the Design/Build Contractor will prepare a job-specific specification. The UFGS shall be edited and adapted by the designer for this project, incorporating UFGS instructions and recommendations in the notes to specifier contained in the guide specs. The designer is to delete inapplicable portions of the guide specification and revise and/or supplement, as required, the applicable portions to provide a complete project specification. Editing of specifications shall be for bracketed options and project requirements as stated in the RFP only. Specifications shall be submitted at final design submittal in hard copy form that shows the text added and deleted with additions highlighted and deletions lined through but still readable. This feature is available in SpecsIntact. Following is a partial list of UFGS specifications required for this project. Other UFGS sections shall be added and submitted by the Design/Build Contractor as needed to address all other portions of the work in the accepted proposal. Use any Division 01 GENERAL REQUIREMENTS or Division 2 SITEWORK specifications provided in full in this RFP. Other Division 01 or 02 specifications listed below but not provided in full should be edited to fit the project and submitted during design.

Division 01 General Requirements

01330 SUBMITTAL PROCEDURES
01355A ENVIRONMENTAL PROTECTION
01356A STORM WATER POLLUTION PREVENTION MEASURES
01420 SOURCE OF REFERENCE PUBLICATIONS
01451A CONTRACTOR QUALITY CONTROL
01500 TEMPORARY FACILITIES

01572A CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
01780A AS-BUILT DRAWINGS SUBMITTALS
01781N OPERATIONS AND MAINTENANCE DATA

Division 02 Sitework

02013 ENVIRONMENTAL PROTECTION DURING CONSTRUCTION
02111 EXCAVATION AND HANDLING OF CONTAMINATED MATERIAL
02221 EXCAVATION, FILLING AND BACKFILLING FOR BUILDINGS
02300 EARTHWORK
02316 EXCAVATION, FILLING AND BACKFILLING FOR UTILITIES SYSTEMS
02364 TERMITICIDE TREATMENT FOR SUBTERRANEAN TERMITE CONTROL
02510 WATER DISTRIBUTION
02370 SOIL SURFACE EROSION CONTROL
02531 SANITARY SEWERS
02547 BITUMINOUS PAVEMENT WITH BASE COURSE
02556 GAS DISTRIBUTION SYSTEM
02630 STORM-DRAINAGE SYSTEM
02754 CONCRETE PAVEMENTS FOR SMALL PROJECTS
02763 PAVEMENT MARKINGS
02770 CONCRETE SIDEWALKS AND CURBS AND GUTTERS
02870A SITE FURNISHINGS
02922 SODDING
02923 SPRIGGING
02930 EXTERIOR PLANTING
02936 TURF - BERMUDA GRASS SEEDING

Division 3 Concrete

03150 EXPANSION JOINTS, CONTRACTION JOINTS, AND WATERSTOPS
03307 CONCRETE FOR MINOR STRUCTURES
03413A PRECAST ARCHITECTURAL CONCRETE (if used)

Division 4 Masonry

04200A MASONRY
04220A NONBEARING MASONRY VENEER/STEEL STUD WALLS (if used)

Division 5 Metals

05120 STRUCTURAL STEEL
05300 STEEL DECKING
05450 PRE-ENGINEERED LIGHT GAUGE STEEL TRUSSED FRAMES (if used)
05500A MISCELLANEOUS METAL

Division 6 Woods and Plastics

06100A ROUGH CARPENTRY
06200A FINISH CARPENTRY

Division 7 Thermal and Moisture Protection

07416A STRUCTURAL STANDING SEAM METAL ROOF (SSMR) SYSTEM (if used)
07600A SHEET METALWORK, GENERAL
07840A FIRESTOPPING
07900A JOINT SEALING

Division 8 Doors and Windows

08110 STEEL DOORS AND FRAMES
08120 ALUMINUM DOORS AND FRAMES
08210 WOOD DOORS
08520A ALUMINUM AND ENVIRONMENTAL CONTROL WINDOWS
08710 DOOR HARDWARE
08810A GLASS AND GLAZING

Division 9 Finishes

09000 BUILDING COLOR AND FINISH SCHEDULE
09009 FLOOR GRID SYSTEM - WALK OFF MAT
09250A GYPSUM WALLBOARD
09310A CERAMIC TILE
09510A ACOUSTICAL CEILINGS
09680A CARPET
09900A PAINTING, GENERAL

Division 10 Specialties

10100A VISUAL COMMUNICATIONS SPECIALTIES
10160A TOILET PARTITIONS
10260A WALL AND CORNER PROTECTION
10270A RAISED FLOOR SYSTEM
10430A EXTERIOR SIGNAGE
10440A INTERIOR SIGNAGE
10800A TOILET ACCESSORIES
10999 FIRE EXTINGUISHER CABINETS

Division 12 Furnishings

12320A CABINETS AND COUNTERTOPS
12490A WINDOW TREATMENT
12705 PREWIRED WORKSTATIONS
12910 ENTRANCE MATS AND FRAMES

Division 13 Special Construction

13080A SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT
13100A LIGHTNING PROTECTION
13721 SMALL INTRUSION DETECTION SYSTEM
13851A FIRE DETECTION/ALARM SYSTEM, ADDRESSABLE SYSTEM
13930 WET PIPE SPRINKLER, FIRE PROTECTION
13935 DRY PIPE SPRINKLER SYSTEM, FIRE PROTECTION

Division 15 Mechanical

15080A THERMAL INSULATION FOR MECHANICAL SYSTEMS
15190A GAS PIPING SYSTEMS
15569A WATER AND STEAM HEATING; OIL, GAS OR BOTH; UP TO 20 MBTUH
15601N CENTRAL REFRIGERATION EQUIPMENT FOR AIR CONDITIONING
15895A AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEM
15951A DIRECT DIGITAL CONTROL FOR HVAC
15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS
15995A COMMISSIONING OF HVAC SYSTEMS

Division 16 Electrical

16070A SEISMIC PROTECTION FOR ELECTRICAL EQUIPMENT
16370A ELECTRICAL DISTRIBUTION SYSTEM, AERIAL
16375A ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND
16415A ELECTRICAL WORK INTERIOR
16710A PREMISES DISTRIBUTION SYSTEM
16770A RADIO AND PUBLIC ADDRESS SYSTEM

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~~167171~~ TELEPHONE SYSTEM OUTSIDE PLANT

7. RFP DESIGN AND TECHNICAL CRITERIA

All designs and construction document drawings and specifications shall be prepared to comply with the RFP. The RFP describes the design work that shall not be changed, and shall be included in the construction documents. All remaining design work shall be performed by the Contractor based on the design criteria as required by the RFP. No deviations from the criteria will be allowed unless prior approval is obtained from the Contracting Officer's Representative. All questions or problems encountered by the Contractor in following criteria shall be promptly submitted with recommendations to the Contracting Officer's Representative for approval.

7.1 Conflicts In RFP Criteria

Where the various elements of the RFP are in conflict, the following priority shall be used to establish precedence, unless specifically noted otherwise:

- a. Specifications
- b. Drawings

8. APPLICABLE BUILDING CODES AND STANDARDS

The codes listed in Appendix A shall be used as standards for building construction and life safety design. Where there is a conflict between the RFP and building codes, the most stringent shall apply. When codes are in conflict, the most stringent shall apply. This list is not intended to be a complete list. All work shall be designed and constructed to meet all state and Federal codes, standards and laws. Refer to the technical specifications for other standards and references not listed below.

9. ENGLISH OR METRIC DESIGN

The design shall be developed using English units of measure. The site survey is done in English units. The Contractor shall submit the required drawings and calculations in English units describing the product or requirement unless otherwise instructed or approved.

10. GENERAL CONSTRUCTION REQUIREMENTS

10.1 Government-Furnished Government-Installed Equipment (GFGI)

All existing loose furniture, equipment, computers and related hardware, video projectors, VCR's, TV's, drink machines, vending machines, microwaves, and refrigerators are Government furnished and installed. The Contractor shall provide utility connections and space for these items.

10.2 Government-Furnished Contractor-Installed Equipment (GFCI)

The items to be specified in the Comprehensive Interior Design Package (modular office furniture and new loose furnishings) are GFCI equipment. See Appendix G to this section. The installation of these items is an Option to the Base Bid as indicated in the Bidding Schedule.

11. SITE CONDITIONS AND REQUIREMENTS.

11.1 Project Limits

The Contractor shall confine all work within the area shown on the site survey and in paragraph 12.1 below.

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11.2 Environmental

~~An environmental site assessment shall be furnished as part the RFP documents. It has been determined that this project contains environmental hazards in lead paint and asbestos found at the Annex building. Lead-based paint may be present on the exterior walls of the Annex building. This area will only be disturbed at the point of connecting the new canopy and cutting the new door opening in the existing masonry wall. An asbestos survey data did not identify asbestos in the existing Annex building. If during construction "asbestos like" materials are encountered the Contractor shall immediately stop work and contact the Contracting Officer Representative.~~

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11.3 Hazardous Materials and Contamination

~~The Contractor will be required to remove or dispose of any hazardous materials or waste during the site preparation phase of this project. . . Areas requiring disturbance including removal, sanding, or scraping should be tested for the presence of lead. If during construction lead is encountered the Contractor shall immediately stop work and contact the Contracting Officer Representative. Debris generated from the activity shall be collected and managed in accordance with the current hazardous waste laws (proper container storage, labeling, etc.).~~

11.4 Disposal of Waste Materials

11.4.1 The Contractor shall identify, as a part of his submittals required by this contract, the specific disposal site or sites for any waste materials generated by the Contractor's operations at Fort Benning. The haul route shall be coordinated with the installation.

11.4.2 The Contractor shall edit and submit the following UFGS as defined in Section 01012 DESIGN AFTER AWARD:

01355 ENVIRONMENTAL PROTECTION. In addition to other requirements within Specification 01355, the following SD-07 Certificates shall be listed requiring Government approval: specific disposal sites, documentation (i.e., weight tickets, etc.), and compliance of disposal by resale.

11.5 Demolition and Removals

The Contractor shall survey and stake-out the project boundaries before starting work. The survey drawing provided in the RFP indicates existing conditions and locations of existing utilities. The Contractor may utilize the utilities during construction operations and may incorporate the utilities as part of the final project. If these existing utilities are determined to be inadequate for construction operations or incorporation into the final facility, they will be upgraded as part of the construction project. However, if the Contractor elects not to use the existing utilities, they will be demolished and removed as part of the construction project. Existing utilities that interfere with this project will be relocated. The information shown on the survey drawing is the most recent data. The Contractor shall be responsible for furnishing an independent topographic survey of the project site, and all line and grade surveys, and as-built surveys of the construction. All demolition debris shall be removed to the landfill off post.

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12. NEW SITE DESIGN AND CONSTRUCTION

The concept site plan presents the general geometric layout for the site work. Access by vehicles is required at the building rear. The Contractor shall design the paving, sidewalks and utilities including fire hydrants, irrigation, landscaping ~~and street lights~~ and all area lighting not provided by Flint EMC. Flint EMC will design and install street and parking lot lighting. The haul route shall be coordinated with the installation.

12.1 Project Limits

The Contractor shall confine all work within the area of the project limits shown on the concept site plan.

12.2 Stormwater Pollution Prevention Plan

A Stormwater Pollution Prevention Plan (Best Management Plan) shall be designed and included in the design submittals shown in Section 01012 and 01355A. The approved plan shall be onsite at all times for inspection by EPA, Georgia Department of Environmental and Natural Resources (GA DENR), and Fort Benning environmental personnel. All activities in the approved plan shall be implemented. The Contractor shall control erosion and sedimentation during construction. Sedimentation of adjacent sites or downstream ditches will not be permitted. The plan shall be approved and permitted by GA DENR.

12.3 Constraints

12.3.1 The new project grading and storm water system shall not impact the surrounding buildings. Construction shall not impact the existing drainage system adjacent to the site.

12.3.2 Building Setback Requirements

The building shall be located on the site in accordance with the DOD Antiterrorism/Force Protection Construction Standards. Building Setback for Streets: 25 meters (82 feet)

12.3.3 The hardwood trees and pines on the site shall be incorporated in the design, retained and protected during construction.

12.4 Access Drives, Parking And Sidewalks

Connections to existing asphalt or concrete pavements shall be accomplished by saw cutting the adjacent existing pavement.

12.4.1 Width Criteria

All pavement and radii dimensions in this section are from face of curb to face of curb. Minimum access drive width shall be 24 feet. Minimum turning radius for all intersections shall be 20 feet except where fire truck access and semi-truck and trailer access is required. Designer shall consider the types of vehicles traversing and parking on these facilities. Vehicles shall include but not be limited to: passenger cars, emergency vehicles, garbage, fire trucks, military vehicles, delivery service, and utility vehicles. Contractor shall provide traffic control signs and pavement markings. Parking stripes shall be white and handicap parking stripes shall be blue.

12.4.2 Curb and Gutters

All pavement shall be bordered with a 6-inch concrete curb and gutter 2 feet wide. All gradients shall provide positive drainage (no ponding). Curb cuts shall be provided as necessary for pavement drainage.

12.4.3 Pavement Thickness

Pavement structure shall be designed for actual vehicle loadings and frequencies. Access drives shall be asphalt pavement with graded crushed aggregate base course or portland cement concrete. See the conceptual site plan for locations of each pavement type. Pavement structure thickness shall be in accordance with TM-5-822-5, Chapter 1 and TM 5-822-5, Chapter 3. Pavement design calculations will be based on the latest version of Pavement Transportation Computer Assisted Structural Engineering (PCASE) program which is available on the web at <http://www.pcase.com>. All PCASE printouts shall be submitted with the design analysis reports. Pavement structure shall be designed for a twenty year pavement life and shall be consistent with Georgia Department of Transportation Standards.. Minimum pavement shall be 1-1/2" of asphalt pavement over 6" of compacted base for POV parking and 3" of asphalt pavement over 8" of compacted base course for Heavy Duty pavement. Heavy Duty asphalt pavement (as shown in the contract drawings) shall be used in pavement areas where Dump trucks, semis, fire trucks and military vehicles traverse. Roads are to have Type "E" asphaltic surface courses and parking lots Type "F", per base Design Guidelines.

12.4.3.1 Concrete Pavement

A concrete joint layout plan shall be required for all concrete pavements. Joint spacing, joint types, and joint grading shall be shown. Concrete pavement thickness shall be designed for an equivalent 8,165-kilogram (18,000-pound) single axle load for the design vehicle loading and number of passes. Pavement life shall be 20 years. Concrete pavement shall be designed in accordance with TM 5-822-5, Chapter 1. The number of joints shall be kept to a minimum by using the greatest joint spacing which will effectively control cracking. The maximum length to width ratio of the slabs shall be 125 percent. Joint sealant type shall be preformed compression seal. Heavy duty concrete with reinforcement shall be used in the area of the dumpsters.

12.4.4 Sidewalks

Sidewalks, minimum 6 feet wide, shall be provided as indicated on the concept site plan. Sidewalks shall be widened as necessary to meet building entrance and exit way widths. Sidewalks shall connect the parking areas to the building exits. Sidewalks shall be wire mesh reinforced concrete with a minimum nominal thickness of 4 inches with 3000 psi compressive strength. Contraction joints shall be spaced at 6 feet on center and expansion joints shall be placed at 50 feet on center and at the intersection of walks and curbs. Minimum cross slope on sidewalks shall be 2 percent. Refer also to Ft. Benning Installation Design Guide.

12.4.5 Handicap Access

Ramps shall be provided for handicapped access. Number of parking slots and site access for the physically disabled shall be as required by ADAAG, UFAS and FS 795.

12.4.6 Parking

12.4.6.1 Parking shall be provided as generally indicated in the layout presented in the concept site plan. All parking shall be 90 degrees off-street parking. Handicap parking stalls shall be provided. Area lighting and landscaping shall reinforce the parking area in accordance with the Fort Benning Installation Design Guide while meeting functional and safety requirements.

12.4.6.2 Parking areas shall be paint striped and adequately drained. Parking stalls shall be 9 feet by 19 feet. Paint markings shall be 4 inches in width. Traffic aisles shall be 25 feet in width.

12.4.6.3 Parking area drainage shall sheet flow to inlets then into the storm collection system. Parking area slopes shall be adequate to provide proper drainage. The minimum longitudinal slope shall be 1% with 5% maximum slope. Minimum transverse slope shall be 1% with 5% maximum slope.

12.4.6.4 Parking area design shall conform to TM 5-822-3. Parking stalls and access drives shall be asphalt pavement with graded crushed aggregate base course. Pavement structure thickness shall be in accordance with TM 5-822-5, Chapter 3. The pavement structure shall be designed for a 20-year pavement life.

12.4.6.5 Area Lighting

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~~The Contractor Flint EMC shall design parking lot area lighting and shall install dark bronze anodized poles and fixtures.~~

12.5 Building Connection to the Site

12.5.1 The finish floor shall be a minimum of 6 inch above finished grade.

12.5.2 Finished grade shall slope a minimum of 5 percent away from the new building for a distance of 10 feet.

13. FOUNDATION AND GEOTECHNICAL DESIGN

13.1 Government Investigation

The Government has performed geotechnical explorations at the project site. The locations of and drilling logs of soil test borings are shown on the drawings included with this RFP. A report of the explorations and analysis is included in Appendix J. This "preliminary" report provides an overview of the soils and geologic conditions, and is furnished for informational and proposal purposes and not for final design; however, the recommendations provided in the report shall be considered to be minimum requirements that shall be incorporated into the final design and construction of the project.

13.2 Contractor Investigation

The offeror to whom this contract is awarded, shall employ the services of a consulting professional geotechnical engineer experienced in geotechnical engineering, who shall be responsible for determining site specific geotechnical conditions. The site-specific geotechnical conditions, together with recommendations specific to the geotechnical design and construction requirements for the proposed project, shall be addressed in a "final" geotechnical report prepared by the consulting geotechnical engineer. The geotechnical report shall include, but not be limited to, the following:

a. Description of the site as to topography, existing surface conditions, and any other features that might influence the design.

b. Description of the investigation program and the methods used. Information obtained from the explorations performed by the Government can be used, supplemented by additional investigations as deemed necessary by the consulting geotechnical engineer. Subsurface exploration may include soil test borings, cone penetrometer test (CPT) soundings, and test pits. The

investigation, sampling, and identification of subsurface materials shall be in accordance with methods and procedures described in ASTM D 420. Soil investigation and sampling by hollow-stem auger borings shall be in accordance with AASHTO T 251. Drilling and sampling with the "Standard Penetration Test" (SPT) split-barrel sampler shall be in accordance with ASTM D 1586. The procedure shall be modified to provide for continuous standard penetration and sampling tests for the initial 12 feet of the boring. Beginning at a depth of 15 feet below grade, penetration and sampling tests every 5 feet and at each change in soil stratification or soil consistency are recommended. The location of the groundwater table, if encountered, shall be measured and recorded after 24 hours. If drilling techniques that prevent determination of the groundwater table are used, install at least one piezometer for every five explorations to measure the depth to the groundwater table. Classification of soils shall be in accordance with ASTM D 2487 or D 2488, as appropriate. Cone penetrometer test (CPT) soundings shall be in accordance with ASTM D 5778. Undisturbed soil sampling shall be in accordance with ASTM D 1587.

The depths of explorations shall be of sufficient depth to evaluate bearing capacity and settlement potential. However, beneath structures, explorations shall extend to a minimum depth of 25 feet below existing ground surface or below final design grade, whichever is lower. Beneath roads, hardstands, and/or parking areas explorations shall extend to a minimum depth of 5 feet below existing ground surface or below final design grade, whichever is lower.

The Contractor shall be responsible for all applicable clearances and permits and for the protection of all underground utilities from damage during field investigations. Utility clearances and digging permits are required prior to drilling on the installation. Procurement of the clearances and permits shall be coordinated through the Contracting Officer.

c. Discussion of the subsurface soil conditions and stratigraphy and groundwater conditions.

d. Location plan of explorations.

e. Logs of explorations. Indicate on logs complete information on who, when, and how made. Show soil description, standard penetration resistance, N, or other type resistance, topsoil, water level observations, surface elevation and datum, and any other information gathered during the exploration.

Exploration locations shall be surveyed. Surveyed elevations and coordinates shall be provided on each exploration log. Elevations shall be in accordance with NGVD 29 and horizontal coordinates shall be in accordance with NAD 83 (Georgia State Plane Coordinates); accuracy to be plus or minus 3 feet horizontal and plus or minus 0.5 foot vertical.

Soil test boring logs shall show graphical representation of soil strata, location of each change by depth or elevation, location of each sample by depth or elevation, and number of blows for each 6 inches and amount of soil recovered for each sample location. Logs shall also indicate type and size of casing, type of drilling fluid, and type and size of drill bit. If no casing is used, indicate size of borehole. Indicate when boring is terminated due to refusal.

Soil classifications for final logs shall be based on the field classifications, the results of tests, and further inspection of samples in the laboratory by geotechnical engineers.

Include a chart illustrating the soil classification criteria and the terminology and symbols used on the boring logs.

Locations of all explorations shall be shown on the grading and drainage plates of the submittal drawings. Logs of all explorations shall be included on plate(s) of the submittal drawings. Additionally, locations of all explorations, logs of all explorations, and results of all laboratory testing shall be included on drawing sheets in the final "As-Built" drawings. If necessary, the logs and test results can be scanned onto the drawing sheets.

f. Laboratory test data shall be included in detail. Laboratory testing shall be in accordance with the requirements set forth in EM 1110-2-1906, Laboratory Soils Testing, EM 1110-2-1909, Calibration of Laboratory Soils Testing Equipment, and/or applicable ASTM standards. All laboratory testing shall be performed by a commercial testing laboratory that has been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection and validation program. The laboratory shall be listed on the list of Corps of Engineers Validated Laboratories.

g. Notation of the location of strata containing organic materials, weak materials or other inconsistencies that might affect engineering conclusions.

h. Pavement design, or if not responsible for pavement design, pavement structural design data, including design California Bearing Ratio (CBR) and modulus of subgrade reaction.

i. Discussion of the facilities under design and recommendations regarding foundation support of the structures and slabs on grade, including soil bearing pressures, bearing elevations, foundation design recommendations and anticipated settlements, including total and differential.

j. Anticipation of, and management of, groundwater.

k. Discussion of site preparation and the effect of weather and construction equipment on soils during construction.

l. Areas requiring undercutting and removal of unsatisfactory soils.

m. Types of materials to be excavated and possible uses and/or disposition of the materials.

n. Fill and backfill placement procedures, including recommended moisture content range, and types of compaction equipment.

o. Results of pH tests and salinity tests and resistivity measurements, as appropriate, necessary to design corrosion control and grounding systems. The raw field data shall be included in the report.

p. Lateral earth pressures and pressure coefficients (active, passive, and at rest) and internal friction angles for design of walls below grade, including backfill, compaction and subdrainage, and their requirements.

q. Results of laboratory soils testing, to include classification and compaction tests, on representative samples of materials to be excavated at the project sites that will be reused as structural fill and of proposed borrow material (both on and/or off the installation). Testing shall be as specified in paragraph 13.8.1. If borrow material is to be obtained from sources off the installation, provide the name and location of the borrow source.

r. Provide calculations that support the recommendations for the foundation design. The calculations may be included in an appendix to the report.

Calculations shall include loadings, capacities, safety factors, settlement analysis, bearing analysis, and references from which calculations are based. Any graphs and formulas shall be clearly indicated along with derivation of curve slopes and data derived from laboratory testing. Computer outputs shall also be included.

Three copies of the geotechnical report shall be submitted with the 60 percent submittal. If revisions are made to the 60 percent design submittal that require revisions to the geotechnical report, a revised report (three copies) shall be provided with the final design submittal. In addition, the pavement design and/or pavement structural design data shall also be submitted with the 100 percent Site/Utility Design Submittal.

13.3 Certification

The successful proposer shall be fully responsible for acceptable foundations, pavements and other geotechnical aspects for the proposed project. The proposer and his professional geotechnical engineering consultant shall certify in writing that the design of the project has been developed consistent with the site specific geotechnical conditions. The certification shall be stamped by the consulting professional geotechnical engineer and shall be submitted with the 100 percent design submittal.

13.4 Foundation Design

13.4.1 General

Given the proposed sites and the proposed structures, it is anticipated that shallow spread footings can be used for support of the proposed buildings.

13.4.2 Allowable Bearing Pressure

Allowable soil bearing pressure shall be determined by the consulting geotechnical engineer. An adequate level of protection against structural failure due to uniform and/or differential foundation settlement or general shear shall be provided.

13.4.3 Footing Dimensions

Column footings and load-bearing wall footings shall have minimum dimensions of 30 inches and 24 inches, respectively, and shall be located at a minimum depth of 24 inches below finish floor or finish grade, as appropriate. Non load-bearing wall footings shall have a minimum width of 18 inches and shall be located at a minimum depth of 18 inches below finish floor or finish grade, as appropriate.

13.4.4 Foundations Over Utility Lines

No foundation shall be constructed over existing or new water, sewer, steam, natural gas, chilled water, industrial waste and foundation drain lines. All foundations shall be stepped down to an elevation below the pipe invert elevation, or the utility line relocated.

13.4.5 Foundations for Walls and Partitions

Thickened slabs shall be required for walls and partitions that have a vertical load of 300 plf to 1100 plf. A separate isolated wall footing shall be used for walls having a vertical load in excess of 1100 plf.

13.4.6 Segmental Concrete Block Retaining Wall

The design of any segmental block retaining walls shall be in accordance with National Concrete Masonry Association (NCMA) SRW Design Manual for Segmental Retaining Walls, latest edition, or the Federal Highway Administration (FHWA) manual Mechanically Stabilized Earth Walls and Reinforced Soil Slopes: Design and Construction Guidelines. Only one method shall be followed for the complete design, including reinforcement design strength, layout, stability calculations, and seismic effects. The segmental retaining wall system shall be designed under the direction of, and be signed by, a professional engineer.

13.5 Seismic Design

Seismic loads shall be computed in accordance with IBC 2000, except as modified by UFC 1-200-01. The project site shall be classified as Site Class D for the purpose of determining maximum considered earthquake spectral response accelerations.

13.6 Slabs on Grade

All interior slabs on grade, including storage rooms, shall be underlain by a moisture vapor barrier consisting of lapped polyethylene sheeting having a minimum thickness of 6 mils and a minimum 4-inch thick capillary water barrier of open graded, washed pea gravel, or crushed stone. Concrete slabs shall be jointed around columns and along supported walls to minimize cracking due to possible differential movement.

13.7 Soil Compaction

13.7.1 Soil compaction shall be achieved by equipment approved by the consulting geotechnical engineer. Soil materials shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining the compaction specified with the compaction equipment used.

Each layer of structural fill and subgrades shall be compacted to the following minimum percent of the modified Proctor maximum density, determined in accordance with ASTM D 1557:

Beneath structures and building slabs, to 5 feet beyond structure limits, around footings and in trenches	90 percent
Beneath streets and paved areas, except top 12 inches in fill and top 8 inches in native soil	90 percent
Beneath streets and paved areas, top 12 inches in fill and top 8 inches in native soil	95 percent
Beneath shoulders	90 percent
Beneath sidewalks and grassed areas	85 percent
Base course under paved areas	100 percent

The requirements shall be verified or modifications recommended by the consulting professional geotechnical engineer in the report wherever engineering, soils, or climatic factors indicate the necessity. Any modification to the specified compaction requirements shall require the approval of the Contracting Officer.

13.7.2 The Contractor, with recommendations and input from his consulting geotechnical engineer, shall edit and submit the following UFGS Specifications:

- 02300A Earthwork
- 02315A Excavation, Filling and Backfilling for Buildings
- 02316A Excavation, Filling and Backfilling for Utilities

Compaction control using one- and two-point compaction tests with a family of curves as described in the Appendix of the Corps "preliminary" geotechnical report shall be included in the specification sections.

13.8 Construction Quality Control Testing

13.8.1 Prior to initiating any structural fill placement and/or compaction operations, representative samples of the soils which will be used as structural fill or subgrade, both suitable on-site soils to be excavated and reused as structural fill and off-site soils (borrow, both on and/or off the installation), shall be obtained and tested to determine their classification and compaction characteristics. The samples shall be carefully selected to represent the full range of soil types to be used. The moisture content, maximum dry density, optimum moisture content, grain-size and plasticity characteristics shall be determined. These tests are required to determine if the fill and subgrade soils are acceptable and for compaction quality control of the subgrades and structural fill. A minimum of 9 compaction tests shall be performed on materials classified as satisfactory for use.

Tests for the above soil properties shall be in accordance with the following:

Moisture Content	ASTM D 2216
Maximum Dry Density and Optimum Moisture	ASTM D 1557
Grain-Size (Wash No. 200, w/o Hydrometer)	ASTM D 422 and ASTM D 1140
Plasticity	ASTM D 4318

13.8.2 A representative number of in-place field density tests shall be performed in the subgrade of compacted on-site soils and in the structural fill and backfill to confirm that the required degree of compaction has been obtained. In-place density tests shall be performed in accordance with the sand cone method prescribed in ASTM D 1556; the use of nuclear gauges for density testing will not be permitted.

In-place density tests shall be performed in the material and at the minimum frequency specified below:

Material Type	Location of Material	Minimum Test Frequency
Fill, embankment and backfill	Beneath structures to 5-foot building line	One test per lift per each increment, or fraction, of 4000 square feet
Fill, embankment and backfill	Beneath paved areas	One test per lift per each increment, or fraction, of 10,000 square feet
Fill, embankment and backfill	All other areas	One test per lift per each increment, or fraction, of 10,000

		square feet
Subgrade	Under building slabs	One test per each increment, or fraction, of 3000 square feet
Subgrade	Under paved areas, excluding roads	One test per each increment, or fraction, of 7500 square feet
Subgrade	Roads	One test per each increment, or fraction, of 100 linear feet
Subgrade	Under footings	One test per every fifth column footing and for each increment, or fraction, of 100 linear feet of wall footings
Backfill	Utility trenches beneath roads and paved areas	One test per each increment, or fraction, of 150 linear feet per foot of depth of backfill
Backfill	Utility trenches beneath grassed areas	One test per each increment, or fraction, of 150 linear feet per 2 feet of depth of backfill
Fill, embankment and Backfill	Areas compacted by hand operated compaction equipment, other than utility trenches	One test per foot of depth per each increment, or fraction, of 250 square feet, or for each 100 linear feet of long narrow (less than 3 feet wide) fills 100 feet or more in length

13.8.3 Any area that does not meet the required compaction criteria shall be reworked, and retested. If the moisture content of the soil is within the recommended range, additional compaction may be all that is necessary to increase the density. If the moisture content is not within the recommended range, then, the moisture content shall be adjusted to within the range, and the area recompacted.

13.8.4 All laboratory and field density testing shall be performed by a commercial testing laboratory that has been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection and validation program. The laboratory shall be listed on the list of Corps of Engineers Validated Laboratories.

13.9 Soil Treatment

13.9.1 The pesticide applicator's principal business shall be pest control and the pesticide applicator shall be State certified in the U.S. Environmental Protection Agency (EPA) pesticide applicator category which includes structural pest control, and certified in the State of the project's location.

13.9.2 Pesticides shall be delivered to the project site in sealed and labeled containers in good condition as supplied by the manufacturer or formulator. Pesticides shall be stored, handled, and used in accordance with manufacturer's labels. Labels shall bear evidence of registration under the Federal Insecticide, Fungicide, and Rodenticide Act (MX), as amended.

13.9.3 The Contractor shall formulate, treat, and dispose of termiticides and their containers in accordance with label directions. Pesticides and related materials shall be kept under lock and key when unattended. Proper protective clothing and equipment shall be worn and used during all phases of termiticide application.

13.9.4 The Contractor shall provide a 5-year written warranty against infestations or reinfestations by subterranean termites of the buildings constructed under this contract. Warranty shall include annual inspections of the buildings. If live subterranean termite infestation or subterranean termite damage is discovered during the warranty period, and the soil and building conditions have not been altered in the interim, the Contractor shall:

- a. Retreat the soil and perform other treatment as may be necessary for elimination of subterranean termite infestation;
- b. Repair damage caused by termite infestation; and
- c. Reinspect the building approximately 180 days after the retreatment.

13.9.5 Termiticides shall be currently registered by the EPA.

13.9.6 At the time of application, the soil moisture content shall be sufficiently low to allow uniform distribution of the treatment solution throughout the soil. Applications shall not be made during or immediately following heavy rains or when conditions may cause runoff and create an environmental hazard.

13.9.7 The Contractor shall establish complete and unbroken vertical and/or horizontal (as necessary) soil poison barriers between the soil and all portions of the intended structure that may allow termite access to wood and wood related products. Application shall not be made to areas intended for use as a plenum air space. Surface treatments shall not be made for areas to serve as crawl spaces. Termiticide shall be applied as a coarse spray and provide uniform distribution unto the soil surface. Treatment shall be applied prior to placement of the vapor barrier and at least 12 hours prior to concrete placement. Where treated soil or fill material is not to be covered with a vapor barrier or waterproof membrane; adequate precautions shall be taken to prevent its disturbance. Soil or fill material disturbed after treatment shall be retreated as specified above before placement of slabs or other covering structures. Treatment of the soil on the exterior sides of foundation walls, grade beams, and similar structures shall be coordinated with final grading and planting operations so as to avoid disturbance of the treated barriers. Manufacturer's warnings and precautions shall be observed in the handling and use of such materials. Care shall be taken to prevent these chemicals from entering water supply systems, potable water supplies, or aquifers; and that they do not endanger plants or animals. The Contracting Officer shall be notified at least 48 hours prior to beginning of treatment and formulating, mixing, and application shall be performed in the presence of the Contracting Officer's representative.

13.9.8 Rates and methods of application shall be in accordance with the manufacturer's instructions on the pesticide label. Maximum application or dosage rates shall be used. If the pesticide contains less than the amount of

active ingredient specified on the label, work shall be repeated with pesticides conforming to this specification.

13.9.9 The Contractor shall dispose of residual pesticides and containers off Government property in accordance with label instructions and EPA criteria.

13.9.10 The Contractor shall edit and submit the following UFGS Specification:

02364A TERMITICIDE TREATMENT MEASURES FOR SUBTERRANEAN TERMITE CONTROL

13.10 Decay Treatment

The Contractor shall be responsible for determining and implementing the appropriate treatment for prevention of subsurface induced decay.

13.11 Radon Mitigation

The design and construction of foundation walls, slabs, and crawl spaces shall include provisions for the reduction of radon entry and facilitate its removal. Radon mitigation shall comply with the requirements of EPA 402-R-94-009.

13.12 Soil Resistivity Testing

The proposer to whom this contract is awarded shall be responsible for all soil resistivity testing required for cathodic protection design of underground utilities and for design of grounding systems.

13.13 Borrow

Borrow material (if needed) shall be selected to meet the requirements and conditions of the particular fill or embankment for which it is to be used. Borrow material shall be obtained from sources off the installation. Necessary clearing, grubbing, and satisfactory drainage of borrow pits and the disposal of debris thereon shall be considered related operations to the borrow excavation. Borrow pits shall be neatly trimmed and drained after the excavation is completed. Borrow materials shall be free of any contaminants.

14. LANDSCAPE DESIGN

A registered landscape architect shall do the landscape design. The landscape shall be designed using the Fort Benning Installation Design Guide as modified herein. Additionally, all minimum anti-terrorism design standards (draft 08 May 2002) shall be adhered to. Graded and scarred areas shall be solid sodded. Existing sod not affected during construction shall be protected. Landscaping shall be absolutely minimum maintenance. Planting shall consist predominantly of tree species matching adjacent growth. Trees shall be planted in a formal pattern to provide shade for the east and west facades, and to highlight the building entrance. Trees shall also be planted in islands designed in the Contractor's parking layout with the intent of breaking up the linear image of the parking lots.

14.1 Turf

Solid centipede sod shall be provided for all graded and scarred areas. All existing grassed areas not graded or disturbed shall remain sodded. Contractor shall be responsible for proper care and watering of grass from the beginning of the turfing operation and continuing for 3 months after

completion of sod placement. New trees and shrubs shall be maintained for a 12-month period after installation. Proper care means watering, fertilizing, cutting and weeding. Trees and shrubs shall require a 1 year warranty and sod shall require a 90-day warranty. Turf preparation shall include eradication of unwanted vegetation and the use of a pre-emergent granular herbicide. Provide for a soil test that includes pH, potassium, phosphorus, calcium, magnesium, nematode count, and soil amendment recommendations (N-P-K). Post planting fertilizer for the turf after the sod is rooted shall be applied based on the soil analysis. Grass shall be mowed initially after achieving a 3-inch growth and then twice monthly thereafter.

14.2 Landscape Plantings

Landscaping shall emphasize low maintenance. Mulch shall be shredded cypress or pine bark. Mulch should have a minimum thickness of 4 inches. Also, there shall be a weed barrier under the mulch. Solid rubber guys with 24 inch stakes shall be used to stabilize newly planted trees. Landscaping shall be in accordance with the Fort Benning Installation Design Guide. Quality plant material shall be as specified by the American Standard for Nursery Stock, ANSI 260.1.

14.3 Approved Plant List

Large trees and small shrubs at entrances, as defined in the Fort Benning Installation Design Guide, shall be consistent with adjacent existing trees and plants.

15. IRRIGATION SYSTEM

Not used.

16. UTILITY LAYOUT

Coordination of all site work on the project, including utility work, is the responsibility of the Contractor. It is the Contractor's responsibility to confirm the specific locations of the existing utilities and to design and construct new utility services for the new buildings. All utilities, including electrical service, telephone and cable TV, shall be installed underground. New underground utility lines, including appurtenant structures such as valve boxes, manholes, vaults, etc. shall not be located under pavement, road shoulders or drainage ditches to the maximum extent practicable. Unless otherwise approved, placing utilities and culverts under existing roads shall be by jack and bore.

16.1 Backflow prevention valves, post indicator valves, transformers, electric switches, telephone/cable boxes, manholes, irrigation pump and controller, etc. shall be located in locations not immediately apparent to the facility users or personnel passing by the site. New utility lines shall not be located within 5 meters (15 feet) of the footprint of any future building as shown on the site plan.

16.2 Marking Of Utility Lines

Utility lines shall be marked with plastic marking tape. Plastic marking tape shall be acid and alkali-resistant polyethylene film, 150 mm (6 inches) wide with minimum thickness of 0.01 mm. Tape shall have a minimum strength of 12.5 MPa lengthwise and 10.5 MPa crosswise. The tape shall be manufactured with integral wires, foil backing or other means to enable detection by a metal detector when the tape is buried up to 1 meter deep. The tape shall be of a type specifically manufactured for marking and locating underground utilities. The metallic core of the tape shall be encased in a protective jacket or

provided with other means to protect it from corrosion. Warning tapes shall be installed directly above all buried pipes or wires, at a depth of 450 mm (18 inches) below finished grade. Tape color shall be as specified below and shall bear a continuous printed inscription describing the specific utility.

Tape Color:

Red:	Electric
Orange:	Telephone, Telegraph, Television, Police, and Fire Communications
Blue:	Water Systems
Green:	Sewer Systems
Yellow:	Gas, Dangerous Materials

16.2.1 Tracer Wire

In addition to the plastic marking tape, tracer wire shall also be provided for all new underground utilities. Tracer wire shall be provided for all pipelines, including force mains but excluding storm drain and sanitary sewer lines. Tracer wire shall be provided for all electrical and communication conduits and direct buried cables. Tracer wire shall be installed on the bottom of the trench just to one side of where the pipe, conduit, or cable contacts the trench bottom. The wire shall run continuously between and terminate at valve boxes on water and gas lines, regulator stub-ups on gas lines, sprinkler heads and valve boxes on sprinkler system lines, panel boxes on electrical lines, and other such aboveground appurtenances. Each end of the wire shall have an additional length of at least 0.6 m (2 feet) coiled up in the appurtenance. Tracer wire shall be insulated No. 12 AWG solid copper and of a type specifically manufactured for locating underground utilities. Insulation shall be solid yellow in color. Tracer wire shall be subject to approval by the Contracting Officer.

16.4 Metering

Area master meters shall be provided where water, gas and electricity are connected to base distribution lines.

17. PERMITS

The Contractor shall determine permit requirements as part of the design process and shall submit permit draft applications as part of the submittal process.

18. STORM DRAINAGE

18.1 Site Storm Drainage System

The site storm drainage system shall be designed for a 10-year return storm frequency. No ponding shall occur for the 10-year event. Storm drainage system design shall be checked for a 100-year return event to insure no flooding or adverse impacts occur down stream. Storm drainage design shall be in accordance with TM-5-820-4.

18.2 The storm drain collection system may consist of grassed swales, concrete inlet drop or curb inlets, concrete headwall and pipe systems. The proposed system shall tie to the existing grassed ditches or pipe systems. Minimum pipe velocities shall be 0.6 m.p.s (2 feet per second) and the maximum shall be 1.5 m.p.s. (5 feet per second) with outlet erosion protection. The minimum pipe size for an open pipe system shall be 0.46 meter (18 inches) and 0.38 meter (15 inches) for a closed system.

18.3 The allowable pipe types shall include concrete pipe, Type III or IV, fully coated corrugated metal pipe as required. Pipe joints shall be water tight with gaskets.

18.4 Concrete inlets/catch basins may be poured in-place or corrugated and high density polyethylene pipe precast concrete. Metal grates or manholes shall be galvanized. Basins shall have 75 mm (3-inch) weepholes cast into the walls. The exterior of the weep holes shall receive a 6 mm (1/4 inch) wire mesh with a 300 mm (12-inch) width belt of crushed rock. Precast manhole or inlet rings shall connect with industry standard gaskets. Storm drain pipes shall be grouted into the concrete structures to provide a watertight connection.

18.5 Building downspouts shall connect to an underground storm drain collection system.

19. WATER AND WASTE WATER

19.1 The Contractor shall design and construct the new water supply and wastewater utility services for the new complex. The Contractor shall provide water service lines, new water distribution lines (as required), and connection to the existing water mains. The Contractor shall also provide new wastewater building laterals, new sewage mains (as required) and connection to the existing sanitary sewerage system. The water and sewage facilities shall be designed and constructed in accordance with the criteria contained herein. Placement of a buried utility main under a new building shall not be allowed. Minimum earth cover for the new utility lines will not be less than 680 mm (27 inches), except for fire water supply lines where the minimum cover shall be 760 mm (30 inches).

19.2 The Government anticipates that the Contractor will connect the new water laterals to the existing water distribution system and that sufficient pressure and quantity will be available for domestic and industrial uses. The design of the water distribution mains and service lines shall provide adequate quantity at sufficient pressure for domestic use and industrial use (vehicle washing, etc.). The Contractor shall determine minimum pressures in accordance with applicable plumbing and fire protection criteria.

19.3 The mains shall be designed and installed in accordance with NFPA 24 and applicable AWWA standards. Water mains shall follow existing streets or utility corridors. The design shall limit installation beneath pavement.

19.4 Design of the service lines shall be in accordance with the National Plumbing Code and applicable AWWA standards. A curb stop or valve shall be installed near the point of connection to the main. Water service lines shall be equipped with suitable meters. Metering of fire service lines is not required.

19.5 The water distribution system in the fire truck parking or servicing area shall provide a fire hydrant dedicated to the fire truck water refilling operations.

19.6 Water Supply for Fire Protection

19.6.1 Interior and outside fire protection shall be designed in accordance with MILITARY HANDBOOK 1008C (MIL-HDBK 1008C). Fire flow test data for either facility is forthcoming.

From these data and the specific fire protection requirements, the Contractor shall determine the need for additional water supply components such as fire

pumps, water storage, or new connection to off-site water mains (perhaps several blocks from the building site).

19.6.2 The Contractor shall provide the required water flow and pressure for the interior and outside (hose stream) demand. Fire pumps and storage shall be provided as required to meet the required water demand. Connection to off-site water mains shall be considered the most desirable solution to water supply needs. Fire pumps (if required) shall be designed and installed in accordance with NFPA 20. Fire pumps shall be electric motor driven. Water storage (if required) shall be designed and installed in accordance with AWWA D100.

19.6.3 The fire sprinkler supply line shall include a post indicator valve with a tamper switch wired to the building fire alarm panel and a double check valve assembly backflow prevention device equipped with a flow detection meter. The backflow prevention device is located in the building.

19.7 Wastewater

19.7.1 The wastewater collection and conveyance system shall be designed in accordance with the Water Pollution Control Federation Manual of Practice No. FD-4, Design of Wastewater and Stormwater Pumping Stations, and No. FD-5, Gravity Sanitary Sewer Design and Construction. In addition, the designer shall comply with specific State and local regulations that apply.

19.7.2 If a sewage pump station is necessary, the Contractor shall provide (as a minimum requirement) a duplex submersible sewage pump station with a 1,524 mm minimum diameter reinforced concrete wet well, with aluminum cover. All electrical components and controls shall be included.

19.7.3 The wastewater conveyance system shall comply with all the above requirements and shall be compatible with the wastewater to be conveyed. The materials specified shall withstand the effects of the wastewater and not deteriorate as a result of pollutants in the wastewater.

20. GAS DISTRIBUTION SYSTEM

Provide a gas distribution system complete with master meter connected to the existing system and designed in accordance with local codes, utility company requirements, and installation requirements. Gas distribution system shall comply with the requirements of NFPA 54, National Fuel Gas Code. Connection to existing gas distribution system shall be made at the location determined by the Contractor. Where new structures are located above existing gas mains, existing gas mains shall be relocated. The Contractor shall bear the cost of installation and relocation of all utilities. When connecting to existing steel piping system, provision shall be made to ensure that the integrity of the cathodic protection is not compromised. Shutoff valves shall be polyethylene (Rockwell) and shall be provided in a valve box on the exterior of the building. A gas regulator shall be provided, located at least 15 feet from the air conditioning system equipment. The building service entrance shall be installed at a height sufficient to allow for installation of the gas meter. Installation of gas piping shall be in accordance with ANSI B31.8, Gas Transmission and Distribution Piping Systems. UFGS Section 02556 GAS DISTRIBUTION SYSTEM shall be the basis for the gas distribution system specifications.

20.1 Drips

Drips shall be installed at the low points immediately following reduction from high pressure to medium pressure (at supply points) and at occasional low points throughout the system to provide for blowing out the lines.

20.2 Valves

Plug valves shall be installed so that interruptions to service can be confined to the building.

20.3 Mains/Service Lines

Lines shall not be placed under any buildings. Lines shall be placed with a minimum of 2 feet of earth cover. Protective casings shall be provided to protect lines from superimposed street or heavy traffic loads. Tracer wire shall be installed with polyethylene piping. Tracer wire shall be terminated in valve box and at riser. The Contractor shall relocate any portion of the existing gas main required to construct the new facility to comply with the directives found in this paragraph.

20.4 Materials

Materials and appurtenances shall be free of defects and suitable to accomplish the stated objectives of gas distribution systems. Pipe shall be polyethylene conforming to ASTM D 2513 and ASTM D 3350, Thermoplastic gas pressure pipe, Tubing, and Fittings, or with fitting complying with either ASTM D 2513, ASTM D 3350, or ASTM D 2683. Connections to metal pipe shall comply with American National Standards Institute (ANSI) B16.5 or manufacturer's recommended standards.

20.5 Testing

Prove that the entire system of gas mains and service lines is gastight by an air test, in accordance with ASME B31.8. The test shall continue for at least 24 hours between initial and final readings of pressure and temperature with the initial reading at least 1 hour after full test pressure.

21. ARCHITECTURAL DESIGN REQUIREMENTS

21.1 GENERAL

The Chapel and Education Facility shall meet the functional requirements with a simple layout that allows for future changes in use. The building aesthetics shall reflect a welcoming, human scale modern business facility that embraces the principles of sustainable design. The buildings shall comply with the Fort Benning Installation Design Guide. The Chapel that conforms to the main Post, includes brick walls, standing seam metal roof and recessed glazing under broad eaves for solar shading. The Education Facility that conforms to the historic district utilizes a synthetic stucco exterior with gray asphalt shingle roofing and exterior detailing to match existing adjacent building. The exterior shall be designed for durability and attractiveness with minimal required maintenance.

21.2 Applicable Codes And Standards

Applicable codes and standards are listed in Appendix A.

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21.3 Functional Layouts

The floor plan included in this solicitation represents an acceptable solution to the functional requirements for this facility. Use of this floor plan is optional. Functional requirements are described in the Functional Room

Requirements document at Appendix B. Arrange spaces in an efficient, functional manner with simple circulation. Provide flexibility that allows future modifications. The proposed structural system shall not adversely impact the required spatial and visual requirements especially the larger assembly spaces where intermediate columns shall not fall within the space and required head height shall be accommodated. Coordinate mechanical room sizes to ensure proposed room sizes will accommodate proposed equipment. Additional information regarding the Chapel design is included in appendix K - Army Chapel Standard Definitive Design.

21.3.1 Chapel

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The following revisions shall be incorporated into the Chapel Floor Plan and Building Elevations:

21.3.1.1 Combine Waiting Room (159) into Office (152) such that Chaplain 3 (160) and Chaplain 4 (163) share common wall with Restroom (158).

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21.3.1.2 Provide and install movable panel in Worship Center only. The supporting structure, blocking, panel enclosures and doors and associated construction will be provided as required for future installation of movable panel in Activity Center. Any gaps left by not installing the panels at this time shall be filled with a secure but easily removable construction compatible with adjacent materials. Provide and install glazing in Crying Room walls facing the Worship Center to accommodate viewing during services.

21.4 Accessibility

This facility is handicap accessible.

21.5 Sustainable Design

This facility has a goal of achieving more than 25 points using the SPIRIT Project Rating Tool for Sustainable Design. Architectural contributions include building envelope characteristics, solar control and daylighting, views, indoor air quality, environmentally preferable materials selections, salvage/reuse opportunities, waste reduction, and close collaboration with all team members and User to synthesize successful sustainable design solutions.

21.6 Construction Type, Fire Protection and Life Safety

This facility shall comply with MILHDBK 1008C, including EC1110-1-92 dated 21 June 2000. MIL HDBK 1008c requires compliance with IBC 2000 and UFC 1-200-01 for construction type, occupancy separation and features related to location on property and compliance with NFPA 101 for egress and life safety. It also contains specific requirements contained in the document itself. See Appendix C for additional code analysis information.

21.7 Gross Area

The gross area of this facility shall not exceed 33,531 square feet, measured in accordance with TI 800-1. Information shown below is an overview of gross area calculation requirements. Refer to TI 800-1, Chapter 5, paragraph 1.c for specific instructions.

21.7.1 Enclosed Space

The gross area includes the total area including all enclosed spaces as determined by the outside dimensions of the building.

21.7.2 Half Space

One-half of the area will be included in the gross area for covered raised loading platforms and covered exterior usable areas such as covered porches and covered walkways.

21.7.3 Excluded Space

Open paved areas; roof overhangs and soffits for weather protection; uncovered ramps; uncovered stoops; covered unpaved areas; and utility tunnels and raceways will be excluded from the gross area.

21.8 Exterior Construction

This facility shall be designed and constructed to provide a watertight durable facility consistent with industry standards and compliant with model building and energy codes. Appearance, materials and colors shall comply with the IDG. The following paragraphs are an overview of the exterior construction requirements.

21.8.1 EXTERIOR WALLS. CHAPEL Primary exterior wall finish shall be common face brick. The brick color shall be reddish to match brick used on nearby construction. Accent finish may be common face brick, concrete, precast concrete/cast stone or white synthetic stucco or prefinished insulated metal panels. EDUCATION FACILITY Primary exterior wall finish shall be white synthetic stucco on concrete masonry unit substructure.

In general, single wythe masonry walls are not permitted. Composite wall construction (grout-filled cavity between wythes) is not permitted. A 2" air space is required between masonry veneer and backup walls. Brick shall not be sealed. Wood trim is not permitted. A sample masonry panel per UFGS is required. Louvers shall be storm-resistant profile and shall have enclosed drainable sill pan and bird screen. Insulated metal panels shall be flat (not corrugated), shall have concealed fasteners (exposed fasteners are not permitted), and shall have manufacturer's 20 year material and finish warranties the same as SSMR roof panels per UFGS. Joint sealants used at building exterior shall have a service life for the exposure condition of at least 10 years, retaining elasticity and seal.

21.8.2 Roof

CHAPEL roof shall be pitched minimum 7:12 slope. The roof covering shall be structural standing seam metal roof (SSMR) system. Architectural (nonstructural) standing seam metal roof is permitted. Standing seam metal roof shall have concealed clip fastening system and be warranted per UFGS 07416, except manufacturer's 20-year weathertightness warranty is not required. Exposed fasteners are not permitted at roofing system. EDUCATION FACILITY roof shall be pitched to match that of adjacent Annex building. The roof covering shall be a gray asphalt shingle to match the existing Annex. [Deviation from the Fort Benning Installation Design Guide will NOT be permitted for a reflective/light roof color that meets SPIRIT 1.C7 requirements.](#) Painted wood is not permitted for eaves, fasciae or soffits. Gutters and downspouts are required. Concealed gutters are not permitted. Roof detailing shall be in accordance with NRCA Roofing and Waterproofing Manual recommendations and standard details. Joint sealants used at building exterior shall have a service life for the exposure condition of at least 10 years, retaining elasticity and seal.

21.8.3 Insulation

Provide a complete thermal envelope. All water and sprinkler pipes must be inside the thermal envelope. Insulation shall not be placed directly on acoustic tile ceiling panels.

21.8.4 Screen Walls

Composite wall construction (grout-filled cavity between wythes) is not permitted.

21.8.5 Exterior Signage

Provide 12-inch high architectural letters at building faces indicating four digit building number. Provide freestanding facility entrance sign per IDG. Provide required signage for the parking areas.

21.8.6 Doors And Windows

All exterior glass must be treated for fragment retention. For insulated glass units the inner pane should be a minimum of 1/4 inch annealed laminated glass. Single glazed doors should be a minimum of 1/4 inch annealed laminated glass. Windows and storefront and storefront door frames shall have a white color pre-finished commercial grade aluminum frames with high-performance organic coating finish and thermal breaks. Windows shall be Performance Class HC. Entry lobby doors shall be medium or wide stile storefront. All other exterior doors and frames shall be painted insulated hollow metal. All exterior hollow metal frames shall be welded type construction. All windows and fixed exterior glass (except in doors) shall have operable window treatments for solar control. Reflective (mirror) glass finish is not permitted.

21.9 Interior Construction

The following paragraphs are an overview of the interior construction.

21.9.1 Room Sizes

Room sizes shown on the concept floor plan and in Appendix B are approximate clear space. Adjustments to room sizes may be acceptable if furnishing and functioning of the rooms are unaffected.

21.9.2 Sound Control

The permanent partitions surrounding and separating the Sanctuary, expansion area and the Activity Center shall have a STC-52 rating. Offices and Meditation Room shall have a STC-52 rating. Classrooms shall be surrounded with STC-45 rating partitions. This includes all door and ceiling treatments as needed to achieve this performance for each space. The main Sanctuary shall have wall and ceiling treatments to control reverberation. All accordion partitions shall have a minimum STC rating of 44.

21.9.3 Secure Construction

No secure construction is required.

21.9.4 Raised Floors

Raised platforms are required at the front of the main sanctuary and at the Activity Center. Ramps integrated into the design shall be provided for accessibility. The raised platform at the Activity Center shall be designed to accommodate storage of folding chairs and tables by dollies below the platform. The storage shall be hidden behind doors.

21.9.5 Doors And Frames

Interior doors may be metal or solid core wood. Door frames shall be metal.

21.9.6 Finishes

Finishes shall be durable and convey the appropriate aesthetics such as would be expected for a typical facility/space of this type in the commercial sector. Sustainable design considerations shall be incorporated into finish selections and building aesthetics. See Appendix B Functional Room Requirements and Appendix D Room Finish Schedule for additional information.

21.9.6.1 Ceramic Tile

Maximum water absorption shall be 0.50 percent. Floor tile minimum coefficient of friction wet or dry shall be 0.60. Floor tile shall be Class IV Heavy Traffic durability classification. Expansion joints shall be per TCA Handbook.

21.9.6.2 Acoustic Tile Ceiling

Acoustic units shall be no larger than 24-inch by 24-inch.

21.9.6.3 Carpet

Carpet shall be tufted; multilevel or level loop; commercial 100% branded nylon continuous filament Type 6 or 6/6 100% recyclable pile fiber; solution or yarn dyed; minimum 0.114 inch pile height; minimum two yarn ply; minimum 1/10 inch gauge; minimum 26 ounces per square yard pile yarn weight, not including weight of backing. Carpet shall be multicolored with at least three colors, random and/or tweed pattern. Avoid extremely bright colors, extremely light colors and high contrast patterns.

21.9.7 Casework And Trim

Cabinets and countertops shall comply with AWI Quality Standards, Section 400, Custom Grade. Wood standing and running trim shall comply with AWI Section 300 Custom Grade.

21.10 Door Hardware

Exit devices shall be rim type or surface vertical rod with touch bar. Use removable mullions where possible at pairs of doors. Cylinders and cores shall have seven pin tumblers. Cylinders shall be fully compatible with products of the Best Lock Corporation and shall have interchangeable cores.

21.11 Interior Glazing

All classrooms, all chaplain's offices and the group office shall have a vision glass panel wither in the door as a sidelight.

22. INTERIOR DESIGN

22.1 Structural Interior Design

22.1.1 Definition

The Structural Interior Design (SID) shall involve the selection and sampling of all applied building related finishes necessary to complete the building's interior and exterior architecture. The SID submittal shall be submitted concurrent with the architectural design submittals. The SID requirements and format shall be in accordance with the Savannah District Interior Design Presentation Format.

22.1.1.1 Predefinition Conference

The Contractor shall lead a predefinition conference at Fort Benning, GA. This meeting shall be attended by Government personnel responsible for this project to include facility user representatives, Fort Benning Directorate of Public Works, and Savannah District personnel. The purpose of the predefinition conference is to present and discuss the SID color scheme for the project. Actual exterior and interior materials, finishes and colors are to be provided for review and comment. The format for this presentation may be on 2-foot x 3-foot matte board. The Contractor may provide colored exterior elevations/perspectives of both the SID exterior and interior color schemes to assist in the discussion and presentation. At the end of the predefinition conference the Government will decide the final SID finishes that will be accepted for incorporation into the construction. The facility user representatives must provide concurrence with the SID prior to Contractor purchase and installation of finishes. Final interior and exterior finishes will be submitted in 8-1/2 inch x 11-inch notebook format.

22.1.2 In general, the SID should reflect a transitional, professional image. Wall colors throughout the facility shall be a neutral color that will enhance accent colors in the existing furniture related items. Accent walls will not be approved for private offices. Accent walls will not be approved except for the lobby. The cove base and door trim shall be a neutral color and shall be consistent throughout the facility. Interior stain colors and finishes shall be consistent throughout the facility. All finishes are to be Class A. This section covers only the general color and minimum characteristics of the exterior and interior materials and products that are exposed to view in the finished construction. The word "color" as used herein includes surface color and pattern. Requirements for quality and method of installation are covered in appropriate sections of the specifications herein and which the General Contractor will submit after award. Specific locations where the various materials are required will be indicated during the 50% and 90% design after award submittals.

22.1.3 Signage Requirements

Interior signage is an important item that is to be fully integrated with the architecture and building related finishes. All signage shall be in accordance with the Department of the Army Technical manual, Signage, TM 5-807-10 and/or Fort Benning sign standards. All signs are to be from one manufacturer and shall match in color and style. All room sign copy is to be Helvetica medium with a ratio of height and width to meet Americans with Disabilities Act (ADA) requirements. Signs are to be provided for all interior doors. Installation shall be wall mounted, on the latch side of the door with the center of the sign installed 59 inches above the finish floor and 6 inches from the outside edge of the metal door frame. Where conditions do not allow signs to be mounted directly adjacent to the door, install signs on the wall at the nearest point to the latch side. Signage for general office areas shall be a modular plaque format with a minimum of three insert slides. All signs are to have a changeable room number sign. All signs are to be a minimum overall dimension of 8 inches wide and 6 inches high. Copy for the first slide is to have a changeable integral, tactile, raised room number with corresponding, Grade 2 Braille indicating the room number. The second two slides are to be window insert slides to accommodate personnel changes or room name changes. Mechanical rooms and other building system room and service support rooms including restrooms are to have permanent room signs with copy that has raised room numbers and permanent room names. Copy is to be raised, tactile, letters and Grade 2 Braille indicating the room number and room name. All signs are to be permanently and mechanically attached to the building. Double-sided tape will not be accepted. Signage message shall be coordinated with the Government/user before ordering or installation. Provide

Emergency Egress sign plaques that indicate "YOU ARE HERE" and the path of egress. These signs are to be fully coordinated with the Fort Benning Fire Marshall at the 100% review submittal design phase and before fabrication and installation. The Fire Marshall is to review the correct placement and quantity of these signs within the building and also review the proposed path of egress that will be graphically illustrated on the sign. Suggested placements for these signs are to be determined before installation.

22.1.4 Reference To Manufacturer's Color and Product

Where color and product is shown as being specific to one manufacturer, an equivalent color by another manufacturer may be submitted for approval. Manufacturers and materials specified are not intended to limit the selection of equal colors, patterns and textures from other manufacturers. However the intent of the design is to remain consistent with this section of the contract.

23. COMPREHENSIVE INTERIOR DESIGN

23.1 The preparation of the Comprehensive Interior Design is part of the Base Bid. The procurement of the items specified in the Comprehensive Interior Design will be accomplished separate from this contract. The installation of these items will be an Option to the Base Bid as indicated in the Bidding Schedule. If awarded, the Contractor shall install the modular office furniture and other items listed in the Contractor-prepared CID. The CID submittals shall be in accordance with the Savannah District Interior Design Presentation Format. The furniture shall be coordinated with the prepared and approved Furniture Placement drawings developed in the SID package. Installation shall include scheduling shipments from vendors, accepting delivery at the site, unloading, inventorying, securing and installing the items.

23.2 Definition

The CID shall involve all the furniture-related components necessary to complete the interior environment. The necessary components shall include all loose furniture/furnishings/artwork.

23.3 CID Philosophy

The CID for this facility shall be coordinated in color, texture, pattern, size, form and function with building footprint and the SID. Furnishings submitted for approval shall reflect the image and style presented in the architecture to further support the corporate image. The Contractor shall select those CID items from UNICOR for which they can meet specifications. The UNICOR web site is: www.unicor.gov and the regional sales representative for UNICOR is Joe McCormick @ 770-982-3156. If they are unable to meet the specifications, the Contractor shall coordinate approval of the waiver with UNICOR and prepare the basis of the waiver request for submission by the Government. All items of furniture/furnishings not available from UNICOR shall be selected from General Services Schedules (GSA). The GSA web site is: www.gsa.gov.

23.4 Format

The CID format shall be in accordance with the Savannah District Interior Design Presentation Format.

23.5 CID Coordination and Installation

The Contractor shall develop and fully coordinate the CID package with the SID package. The CID submittals shall run concurrent with the SID submittals. The Contractor is required to purchase the CID package items and is required to schedule with all the CID vendors the delivery and installation of the CID. Phasing the delivery and installation of the CID package items shall be determined by the Contractor. The Contractor will procure the CID items.

23.6 Requirement Analysis

The Contractor shall interview the Government and determine the CID requirements. CID items and quantities shall be determined by but are not limited to: (1) the number of personnel to occupy the building, (2) job functions and related furniture/office equipment to support the job function (3) room functions (4) rank and grade.

23.7 CID Furnishing List

Typical CID items to specify for this building are:

- Executive Wood Furniture
- Support desks
- Artwork
- Bookcases
- Bulletin Board, Porcelain Marker Boards
- Chairs-all kinds, including stools
- Desks-freestanding Technical support and Executive Level Quality
- Desk-based systems furniture workstations-
- Files-all kinds
- Lamps-all kinds
- Podium/lecture stands
- Storage-all kinds
- Silk Plants
- Tables-all kinds
- Waste cans-various sizes

All specific/special items as required by the government/user. For ecclesiastical furnishings refer to Table 2 of Appendix K.

23.8 The Government will direct the Contractor as to the sources that will be used to ensure coordination with existing items. To the fullest extent possible, General Services Administration sources will be specified.

24. OMITTED

25. STRUCTURAL DESIGN REQUIREMENTS

25.1 General

The following criteria shall be used for loading, design and installation of all structural systems, including manufacturing, erection, supervision, testing and quality assurance. The completed structural design shall include all elements for foundations, walls, roof framing and diaphragms. It shall also include lateral load stability analyses as well as support for architectural features, mechanical and electrical equipment. All calculations shall be performed by a registered engineer, checked by an engineer other than the design engineer, and shall be in accordance with the guidance provided in the U.S. Army Corps of Engineers, Savannah District "Design Manual for Military Construction." The primary code used for structural design shall be the 2000 International Building Code (IBC) and those codes referenced therein, except as modified by the DoD Unified Facilities Criteria UFC 1-200-01, dated 31 July 2002 and the following paragraphs.

25.2 Design Loads

Dead loads, live loads, and load combinations shall be in accordance with the requirements of the IBC 2000.

25.2.1 Wind load shall be in accordance with the IBC 2000.

Wind Velocity:	90 mph
Exposure:	C
Category:	III
Importance Factor:	1.15

25.2.2 Seismic load shall be in accordance with IBC 2000 except as modified by UFC 1-200-01.

Spectral Response

Ss:	.16
S1:	.08
Seismic Use Group	II
Site Classification	D
Seismic Design Category	B

Occupancy Importance Factor, I = 1.25

25.2.3 Snow load shall be in accordance with IBC 2000.

25.2.4 Anti-terrorism/Force Protection

For FY 03 Military Construction Program projects the following applies:

Anti-terrorism/force protection systems must be included for this project and shall conform to the "Interim Department of Defense Antiterrorism / Force Protection Construction Standards, "dated 16 December 1999. Structures located within the minimum setback distance noted in Appendix AP 2.1.3 of that document must be designed for blast overpressures. All other structures must meet the requirements of Appendix AP 2.4.1. Additional guidance may be found in "Department of Defense Interim Antiterrorism/Force Protection Construction Standards - Progressive Collapse Design Guidance", dated 4 April 2000.

For FY 04 and later Military Construction Program projects the following applies:

Anti-terrorism/force protection systems must be included for this project and shall conform to the Unified Facilities Criteria (UFC) "DoD Minimum Antiterrorism Standards for Buildings" UFC 4-010-01, dated 31 July 2002.

Manuals are available from U.S. Army Engineer District, Omaha, ATTN: CENWO-ED-ST, 12565 West Center Road, Omaha, NE 68144-3869.

25.2.5 Special Loads

Floor Live Loading:	
Worship Center	100 psf
Education Center Classrooms:	40 psf
Offices:	50 psf
Corridors: Ground Floor	100 psf
Mechanical:	125 psf (or equipment weight, whichever is greater)
Storage:	125 psf

Roof Live Loading:

Typical Areas: 20 psf (no reductions allowed)

25.3 Drawings

25.3.1 Design drawings shall have General Structural Notes containing design loading criteria, strengths of engineering materials used, design soil values and any other data that would be pertinent to remodeling and/or future additions since design analyses and specifications often become separated from the contract drawings and lost after a project is completed.

25.3.2 Walls mostly below grade that are supported laterally by diaphragms at or near the top and bottom, shall be designed using loadings based on at rest soil pressures. All masonry walls below grade (below first floor finish floor) shall be solid grouted.

25.3.3 Diaphragms shall have continuous chord members on all edges and shall have a direct positive connection for transferring load to all members of the main lateral force resisting system.

25.3.4 If used, structural standing seam metal roofs (SSMR) shall be attached to 16 gage minimum thickness steel to allow sufficient screw thread engagement. This shall include the attachment of the clip as well as the subpurlin.

25.3.5 References and Design Criteria

a. *Minimum Design Loads for Buildings and Other Structures - ANSI/ASCE 7-98.*

b. MBMA-01 Low Rise Building Systems Manual (latest edition).

c. National Concrete Masonry Association (NCMA), Specifications for the Design and Construction of Load Bearing Concrete Masonry.

d. ACI-ASCE 530, Building Code Requirements for Concrete Masonry (1995)

e. American Institute Of Steel Construction (AISC), Manual of Steel Construction, 9th edition

f. Manual of Steel Construction, LRFD 3rd edition

g. Steel Deck Institute (SDI) Diaphragm Design Manual (latest edition)

h. American Welding Society, Welding Handbook

i. Steel Joist Institute (SJI) Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders

j. FEMA 302, NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures, Parts 1 and 2

k. ACI 315-99, Details and Detailing of Concrete Reinforcement

l. ACI 318-99, Building Code Requirements for Structural Concrete

m. SDI Design Manual for Composite Decks, Form Decks, Roof Decks, and Cellular Decks

- n. UNIFIED FACILITIES CRITERIA UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings.

Design Guidance

- Design Manual for Military Construction, Corps of Engineers, Savannah District

- Design Criteria (Except as noted otherwise, the more stringent of the following documents shall govern:)

International Building Code 2000

As modified by Unified Facilities Criteria UFC 1-200-1

TI 809-04, Seismic Design Criteria for Buildings (Only as referenced by UFC 1-200-1)

TI 809-07, Design of Loadbearing Cold-Formed Steel Systems

TI 809-30, Metal Building Systems

TM 5-809-3, Masonry Structural Design for Buildings

TM 5-809-12, Concrete Floor Slabs on Grade Subjected to Heavy Loads

Also see Appendix A for list of references.

25.4 Foundations

Foundations shall be reinforced concrete continuous spread footings, isolated spread footings, grade beams, piles, drilled piers or other as required by geotechnical investigation. Ground floor slab systems shall be slab-on-grade or supported by piles as recommended by geotechnical investigation. Bottom of foundations shall be located a minimum of 2 feet below grade.

25.5 Serviceability

25.5.1 Vertical deflection ratios of suspended horizontal framing members for dead plus live loads shall not be less than:

- a. $L/240$ at roofs
- b. $L/600$ at masonry lintels

25.5.2 Horizontal deflections caused by seismic or wind loads shall not exceed the limits set forth in the Savannah District "Design Manual for Military Construction."

25.6 Concrete Design

f'_c will be no less than 3000 psi.

25.6.1 Concrete Materials:

- a. Cement: ASTM C 150, Type I-II Portland cement
- b. Fly Ash: ASTM C 618, Class "F"
- c. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 120
- d. Fine Aggregate: ASTM C 33
- e. Coarse Aggregate: ASTM C 33
- f. Air-Entraining Admixture: ASTM C 260

- g. Accelerating, retarding and water-reducing admixtures: ASTM C 494
- h. Flowing Concrete Admixture: ASTM C 1017, Type 1 or 2
- i. Calcium Chloride shall not be permitted

25.6.2 Slabs

25.6.2.1 Slabs-on-grade shall be a minimum thickness of 4 inches and reinforced with fiber reinforcing. Slabs thicker than 4 inches shall be reinforced with welded wire fabric. "Mud slabs" in crawl spaces do not have to be reinforced and shall be 2 inches thick.

25.6.2.2 Slabs shall be placed in lane fashion. Area of sections bounded by crack control joints shall not exceed 600 square feet, and distance between crack control joints shall not exceed 25 feet. Joints should define a square area as much as practical.

25.6.2.3 Vapor Barrier

Provide vapor barrier under all interior floor slabs. Polyethylene sheet not be less than 6 mils thick. Provide 4-inch capillary water barrier under the vapor barrier.

25.6.2.4 Crack control joints shall be as shown in the Savannah District "Design Manual for Military Construction", Chapter A-2, Exhibit A-2-15. Reinforcement when required will be interrupted (2 inches clear each side) at sawed or pre-placed crack control joints. Bars shall be mid-depth, and starting 2 inches from edge of slab. The ends of crack control and corners of isolation joints will meet at a common point so far as practical. Floor slab isolation joint shall be 3/16-inch felt. Re-entrant corners shall be reinforced with a minimum of one #4 diagonal bar.

25.6.2.5 Vertical and horizontal runs of conduits and pipes in slabs shall conform to ACI 318. Elevated slabs shall additionally meet the ratings of UL floor assemblies where required. Aluminum conduit and pipes will not be embedded in any concrete.

25.6.2.6 Expansion Joints: Stop reinforcing at joint and provide smooth slip dowels across joint. Provide a bond breaker isolation joint where all concrete slabs abut a vertical surface (foundation walls).

25.6.2.7 Where thickened slabs are employed under column bases or partitions, crack control joints shall be offset from the thickened areas.

25.7 Masonry Design

25.7.1 Concrete masonry units shall have a minimum compressive strength of 2000 psi on gross area and 1000 psi on net area at 28 days.

25.7.2 Concrete Masonry Materials

- a. Hollow Concrete Masonry Units: ---- ASTM C90, Grade N, Type I or II
- b. Mortar for Masonry: ----- ASTM C 270, Type S
- c. Grout for Masonry: ----- ASTM C 476
- d. Horizontal Joint Reinforcement: -- 9-gage deformed wire, ladder-type

25.7.3 Provide solid brick where cores in cored brick might be exposed.

25.7.4 Joints shall be 3/8 inch, tooled concave.

25.7.5 Brick veneer ties shall be corrugated galvanized steel spaced 16-inches on center both vertically and horizontally.

25.7.6 Brickwork shall comply with latest edition of the Brick Institute of American Technical Notes No.28, Brick Veneer, New Construction.

25.7.7 Masonry walls shall have vertical control joints as follows:

- a. Exterior and interior walls: 24 feet maximum
- b. At changes in wall height or thickness
- c. Near wall intersections
- d. At points of stress concentration
- e. At control joints in foundation walls and in floors that support masonry walls
- f. At other locations where cracks are likely to occur

25.8 Structural Steel Design

25.8.1 Detailing of structural steel framing, including connections, shall be complete. All weld types, bolting layouts, bolt sizes, connection plates and member sizes and locations and stiffener plate sizes and locations shall be shown.

25.8.2 All members, elements and connections that are a part of the main vertical and/or lateral force resisting system must be completely detailed.

25.8.3 All connections other than standard AISC pre-designed shear connections shall be designed by the engineer of record and detailed on the drawings.

25.8.4 If braced frames are used for all or part of the main lateral force resisting system, the stability of structural system shall not depend on any single member or connection. Redundancy shall be provided either by using multiple bays of tension only x-bracing or by using bracing members that are capable of both tension and compression if bracing is placed in a single bay.

25.9 Steel Joist Design

25.9.1 Joists shall be anchored to steel supports by field welding. Provide erection bolts as recommended by SJI. Provide embedded steel bearing plates in concrete and masonry work. Where top chords are extended provide required section modulus of extensions on the drawings.

25.9.2 Provide special joist seats for sloped roof as required. Modifications or adjustments to joist seats made to accommodate supplier's fabrication process shall be coordinated with affected trades.

25.9.3 Provide bridging and cross bridging at bottom chords of joist per SJI recommendations.

25.9.4 Design joists for additional gravity loads and uplift loads as required by analysis.

25.9.5 Provide additional web members at concentrated loads indicated, which do not occur at a panel point. Joists shall not support vertical loads greater than 50 pounds on the bottom chord between panel points without reinforcing. Do not support loads from bridging.

25.10 Steel Decking Design

25.10.1 Form deck shall be galvanized. Metal form material shall be minimum 28 gage.

25.10.2 Steel roof deck material shall be galvanized and be 22 gage minimum. A structural steel roof deck shall be provided under all nonstructural metal roofs. If SSMR will be attached directly to steel roof deck, then minimum thickness shall be 16 gage. (Structural SSMR only.)

25.10.3 Galvanized steel roof deck in areas without ceilings which are exposed to view and are scheduled to be finish painted should be specified to receive a factory primer coat on the underneath side of deck.

25.11 Cold Formed Steel Design

25.11.1 Cold Formed Steel Materials:

a. Galvanized Structural Framing Members 16 gage and heavier: ASTM A 653, Grade D, 50 ksi.

b. Galvanized Structural Framing Members 18 gage and lighter: ASTM A 653, Grade B, 36 ksi.

25.11.2 Trusses fabricated from cold-formed steel members shall be designed and the drawings stamped by a registered engineer.

25.11.3 Cold-formed steel members, their components, and connection material shall have G60 galvanized coating.

25.11.4 Top chords of cold-formed roof members shall be 16 gage, minimum, where standing seam roof clips are connected with screws. (Structural SSMR only.)

25.12 Wood

25.12.1 Retardant Treatment, when required. Recommendations regarding the use of fire retardant treatment are provided in USDA Wood Handbook and National Protection Handbook. Pressure impregnation is the preferred treatment method.

25.12.2 Termite control measures will be used in areas prone to termite infestation. Soil will be treated with commonly accepted termite control products prior to construction.

25.12.3 Use of oriented strand board (OSB) for floor sheathing is not permitted. Only APA structural rated plywood shall be used for floors.

25.13 Other Materials

25.13.1 There are no restrictions on proposing other materials to be used in the structural systems of this project if their strengths and durability can be substantiated by ASTM or other approved laboratory tests, and they satisfy the requirements of the design codes and criteria specified in this document.

25.13.2 All design, manufacture, fabrication, and assembly of other construction materials to be used in structural framing systems shall conform to the applicable design standards and meet specific industry standards as required for each subject material.

26. PLUMBING REQUIREMENTS. (Chapel and Education Facility)

26.1 Plumbing Design References, Codes, and Standards.

26.1.1 The design and construction of the plumbing systems for the Chapel and Education Facility shall be in compliance with design criteria listed below,

latest editions; as required herein; and the referenced Unified Facility Guide Specifications (UFGS). Guide specifications are referenced in this RFP for their use in preparation of the design and shall be edited consistent with the criteria furnished. The most current edition of the codes, standards, and references shall be used for project design. Where there is a conflict between the RFP and the codes and standards the most stringent shall apply. When codes and standards are in conflict, the most stringent shall apply.

Design Criteria List:

- Savannah District Design Manual for Military Construction, dated May 2000.
- Savannah District Drafting Standards.
- International Plumbing Code
- Uniform Plumbing Code
- Army Technical Manuals
 - TM 5-800-1 Design Criteria
 - TM 5-810-5 Plumbing
 - TM 5-810-6 Nonindustrial Gas Piping System
- National Fire Protection Association (NFPA) Standards.
 - NFPA 54 Natural Fuel Gas Code
 - NFPA 101 Life Safety Code
- Provide services or systems for items listed in Appendix B - Functional Room Requirement Sheets.
- All other codes and standards listed in Section 01010.

26.1.2 Toilet areas and plumbing fixtures shall be handicapped accessible as required by Accessibility Guidelines for Buildings and Facilities.

26.2 Provide plumbing systems as follows: (Chapel and Education Facility)

26.2.1 Domestic Water Systems.

Building Water Supply shall start 5'-0" outside building and extend to Mechanical Room. Service entrance inside the mechanical room shall include main shut-off, double check backflow preventer, and water meter with remote readout capability from UMCS.

Water Distribution. Water shall be supplied to restrooms, mechanical equipment, and any other items requiring water. All piping shall be labeled, color coded, titled, and indicate direction of flow. Shutoff/isolation valves, water hammer arrestors, shower control valves, trap primer valves, and all other control components and equipment requiring adjustment and/or maintenance shall be readily accessible through the use of lay-in ceilings and/or appropriately sized access doors. A pressure-reducing valve assembly (with valved bypass) shall be provided in the cold water main where system pressures exceed 60 psig. Routing of water piping below floor slabs shall be limited to the building entrance penetration. All connections to water system such as hydrants, service sinks, HVAC make-up and irrigation systems to have backflow protection. Water hammer arrestors shall be provided for all plumbing fixtures with flush valves for shock suppression. The placement of water hammer arrestors shall be as referenced in International Plumbing Code. Appropriate means shall be provided within the plumbing system design to insure that all fixture trap water seals susceptible to loss of water seal by

evaporation are replenished. Trap primers shall be provided for all floor drain traps to prevent loss of water seal by evaporation.

26.2.2 Domestic Hot Water.

The domestic hot water service shall extend from the water heater to plumbing fixtures and equipment requiring hot water. The heater shall be sized to meet the domestic hot water heating requirements for the buildings. Domestic hot water shall be generated and stored at 140 degrees F. minimum and delivered to plumbing fixtures using a mixing valve at the heater to limit temperature to 110 degrees F. Provide thermostatic mixing faucet at all plumbing fixtures requiring hot water.

Hot water to fixtures and equipment shall be supplied from a circulated loop connected to the water heater. Domestic hot water shall be provided using natural gas. The water heater and circulation pumps to be connected to the building DDC system.

26.2.3 Drainage System.

Sanitary, waste, and vent system shall be provided for restrooms, fixtures, and floor drains located in mechanical equipment rooms.

Sanitary drain waste and vent systems shall extend from 5 feet outside the building to all fixtures and equipment requiring service. The exit location of the building waste and sanitary sewer main shall be coordinated with existing site conditions shown on utility drawings. The system shall be provided with traps, vents, cleanouts, and all other components as required by code.

Floor drains shall be provided in all toilet locations and mechanical equipment rooms.

Kitchen fixtures and drains shall connect to building sanitary sewer system. Three- or four-compartment sinks shall be provided with point-of-use type grease trap.

26.2.4 Storm Drainage System. Refer to Architectural design.

26.2.5 Natural Gas to supply domestic water heater and mechanical equipment. Natural gas shall be provided with meter, regulators and a complete piping system. Gas meter to be provided with remote readout capability from UMCS.

26.2.6 Plumbing Materials, Equipment and Fixture Requirements.

26.2.6.1 Routing and Design. All piping shall be concealed, properly supported with allowances for expansion and contraction. Water piping under floor slab shall be encased in cast iron sleeve. All piping systems shall be drainable. Interior hot and cold water piping systems shall be insulated. Water piping systems (including sprinkler piping) shall not be routed or located where subjected to freezing, and shall be located within the insulated building envelope. Heat tracing (to prevent freezing) of interior piping systems will not be allowed. Individual shutoff or stop valves shall be provided on water supply lines to all plumbing fixtures. Individual stops shall also be furnished at all equipment connections such as vending machines, icemakers, etc. Shower control valves shall be provided with integral stops (shut-offs). Isolation shutoff valves shall be provided for each toilet room group to allow isolation shutoff for maintenance purposes while continuing service to the remainder of the building. Consolidate fixture vents through one common vent whenever possible. All vent penetrations through the roof shall be made through a roof jack designed for use with the roofing system

furnished and color-matched to the roof. Above ground piping shall run parallel with the lines of the building and in accordance with UFGS 15400A, Plumbing General Purpose, unless otherwise indicated. Floor drains shall be provided in all toilet rooms, mechanical rooms and for equipment requiring drainage. All floor drain traps shall be automatically primed by single trap primers or where appropriate distribution unit type trap primers. All vents shall be routed so that roof penetrations occur on the least public side of the building.

26.2.6.2 Each fixture and piece of equipment requiring connections to the drainage system shall be equipped with a trap, and all fixtures shall be vented. Surface or wall cleanouts shall be provided for each drainage main. Cleanouts shall be provided at each change in direction of sanitary sewer lines, at the intervals specified in the IPC, and at the building service entrance. All cleanouts shall be permanently accessible. Ground cleanouts shall be installed in a 12 inch by 12 inch , 4 inch thick concrete pad, flush with grade. Pipes passing through elevated slab shall pass through a pipe sleeve and be installed in accordance with UFGS 15400, Plumbing General Purpose.

26.2.6.3 Piping Distribution System (Below Grade).

Domestic water service is Schedule 40 or SDR26.

Sanitary sewer, waste, and vent systems is H/S cast iron. (Oakum joints not allowed.)

26.2.6.4 Piping Distribution System (Above Grade).

Domestic water piping is copper, Type "L", with "no lead" solder joints. All domestic water piping is insulated with fiberglass insulation meeting the flame and smoke rating of NFPA.

Sanitary, waste, and vent piping is no-hub cast iron pipe and fittings.

Natural gas piping is black steel with welded fittings.

26.2.6.5 Special Requirements.

Provide waste, vent, and hot and cold water for Baptistry. Provide floor drain in area around Baptistry.

26.2.7 Plumbing Fixtures. Fixtures shall be provided complete with fittings, and trim. All shutoff valves shall be metal construction. Plastic valves are not acceptable. All fixtures, fittings, and trim in a project shall be from the same manufacturer and shall have the same finish.

26.2.7.1 Plumbing shall meet the following criteria:

a. In general, all faucets shall have solid brass bodies, ceramic valving, and chrome plated or trim. Water flow shall be no more than 2.5 gpm from any faucet.

b. Fixtures shall be water conservation type, in accordance with the International Plumbing Code.

c. All vitreous china plumbing fixtures shall conform to ANSI A112.19.2M, Vitreous China Plumbing Fixtures. Stainless steel fixtures shall be in accordance with ANSI A112.19.3M, Stainless Steel Plumbing Fixtures.

d. Lavatories and/or sinks in Children's Restrooms and Work Areas shall have protective covers on waste and water supply.

e. Floor drains shall be provided in toilet rooms, mechanical rooms and for equipment requiring drainage. Floor drains shall be cast iron body and grate. All floor drain traps shall be automatically primed by single trap primers or where appropriate distribution unit type trap primers.

f. Fixture descriptions shall be as described by the American Society of Mechanical Engineers, ASME A112.19.

26.2.7.2 Water Closets. Siphon-jet, elongated bowl, top supply spud, ASME A112.19.2M, floor mounted. Gasket shall be wax type. Seat - ANSI Z124.5, Type A, white plastic, elongated, open front. Flushometer Valve - ASSE ANSI/ASSE 1037, large diaphragm type with non-hold-open feature, backcheck angle control stop, and vacuum breaker. Minimum upper chamber inside diameter of not less than 2-1/2 inches at the point where the diaphragm is sealed between the upper and lower chambers. The maximum water use shall be 1.6 gallon per flush. Water closet trim shall conform to ANSI A112.19.5, Trim for Water-Closet Bowls, Tanks, and Urinals (Dimensional Standards). Any water closets designed as handicapped water closets shall meet the top rim of the bowl height requirements of CABO A117.1.

26.2.7.3 Urinals. Wall hanging, with integral trap and extended shields, ASME A112.19.2M, siphon jet. Top supply connection, back outlet. Flushometer Valve - ASSE ANSI/ASSE 1037, large diaphragm type with non-hold-open feature, backcheck angle control stop, and vacuum breaker. Minimum upper chamber inside diameter of not less than 2-1/2 inches at the point where the diaphragm is sealed between the upper and lower chambers. The maximum water use shall be 1 gallon per flush. Urinal trim shall conform to ANSI A112.19.5, Trim for Water-Closet Bowls, Tanks, and Urinals (Dimensional Standards).

26.2.7.4 Lavatories. Manufacturer's standard sink depth, vitreous china ASME A112.19.2M, wall hung and under counter mount as shown on the Conceptual Floor Plans.

a. Faucet - Faucets shall be single lever, centerset, washerless type. Faucets shall have all brass and copper waterways and ceramic valving. The flow shall be limited to 2.5 gpm per second at a flowing pressure of 80 psi.

b. Drain - Strainer shall be copper alloy or stainless steel.

c. Handicap lavatories shall conform to ADA and Uniform Federal Accessibility Standards (Fed. Std. 795) for fixture height and safety insulation. Handicap lavatory faucets shall be ADA compliant.

26.2.7.5 Standard Shower.

a. Shower valve shall be single lever, pressure-balancing, anti-scale thermostat mixing type, designed to maintain constant water temperature by automatically compensating for water pressure changes. Faucet shall be of solid brass construction with washerless ceramic valving. Adjustable pattern showerheads shall be provided and shall be chrome plated or polished nickel finish to match levers and escutcheons. Provide a flow control device with the shower head to limit the flow to a maximum of 2.5 gpm at a flowing pressure of 80 psi.

b. Drain - stainless steel.

26.2.7.6 Break Room Sinks. Sinks shall be of size and configuration shown on the conceptual floor plan or as found in the architectural specifications and

shall be constructed of stainless steel. Faucets shall be same as the bath faucets in material, but designed for kitchen sink application.

26.2.7.7 Water cooler drinking fountains. Water cooler drinking fountains shall be located in close proximity to each restroom and break room. Corridors which are distant from these rooms shall contain at least one water cooler drinking fountain as well. Water cooler drinking fountains shall: be self contained, conform to ARI 1010, use one of the fluorocarbon gases conforming to ARI 700 and ASHRAE 34 which has an Ozone Depletion Potential of less than or equal to 0.05, have a capacity to deliver 7.6 gph of water at 50° F with an inlet water temperature of 80° F while residing in a room environment of 90° F and have self-closing valves. Self-closing valves shall have automatic stream regulators, have a flow control capability, have a push button actuation or have a cross-shaped index metal turn handle without a hood. Exposed surfaces of stainless steel shall have No. 4 general polish finish. Spouts shall provide a flow of water at least 4 inch high so as to allow the insertion of a cup or glass under the flow of water.

26.2.7.8 Wall Hydrants (Exterior). Wall Hydrants shall be provided on each exterior wall of the building. Each hydrant shall be box type, freeze proof, with a integral vacuum breaker/backflow preventer. Hydrants shall have 3/4 inch hose connections.

26.2.7.9 Major Appliance Plumbing Connections. The Contractor shall provide appropriate connections for all appliances, vending machines, and any other items requiring water and/or drain connections.

26.2.8 Testing. Entire plumbing system shall be tested in accordance with project specifications, and International Plumbing Code.

27. FIRE PROTECTION.

27.1 Fire Protection Design References, Codes, and Standards.

27.1.1 The design and construction of the fire protection systems for the Chapel and Education Facility, shall be in compliance with design criteria (latest edition) listed below, as required herein, and the referenced Unified Facility Guide Specifications (UFGS). Guide specifications are referenced in this RFP for their use in preparation of the design and shall be edited consistent with the criteria furnished. The most current edition of the codes, standards, and references shall be used for project design. Where there is a conflict between the RFP and the codes and standards the most stringent shall apply. When codes and standards are in conflict, the most stringent shall apply.

Design Criteria List:

- Savannah District Design Manual for Military Construction, dated May 2000.
- Savannah District Drafting Standards.
- International Building Code 2000
- Army Technical Instructions (TI)
 - TI 800-01 Technical Instructions, Design Criteria
- Military Handbooks (MIL-HDBK)
 - MIL-HDBK-1008C Military Handbook Fire Protection for Facilities Engineering Design and Construction
- National Fire Protection Association (NFPA) Standards.
 - NFPA 13 Installation of Sprinkler Systems

NFPA 20	Installation of Stationary Pumps
NFPA 24	Private Fire Service Mains
NFPA 72	National Fire Alarm Code
NFPA 96	Ventilation Control and Fire Protection of Commercial Cooking Operations
NFPA 101	Life Safety Code
NFPA 241	Construction, Alteration and Demolition Operations

- All other codes and standards listed in Section 01020.

27.2 Qualifications of Fire Protection Engineer. The design of the fire protection features shall be by a qualified fire protection engineer meeting one of the following conditions: a.) An engineer with a Bachelor of Science or Masters of Science Degree in fire protection engineering from an accredited university engineering program, plus a minimum of 5 years work experience in fire protection engineering; b.) A registered professional engineer who has passed the National Council of Examiners for Engineering and Surveys (NCEE) fire protection engineering written examination; c.) A registered P.E. in a related engineering discipline with a minimum of 5 years experience dedicated to fire protection engineering. The name and credentials (education, registration, experience) of the fire protection engineer shall be submitted with the initial contract documents and approved by the District fire protection engineer prior to proceeding with fire protection design.

27.3 Fire Suppression System. Automatic wet pipe sprinkler protection shall be provided for the building. The requirements indicated below shall be incorporated into the design.

27.4 Sprinkler System. The facilities shall be fully protected with an automatic wet pipe sprinkler systems. All floors and all areas of the facilities shall be protected. The sprinkler system designs shall be in accordance with MIL-HDBK-1008C, NFPA 13, 24, 72 and 241, and UFGS Specification Section 13930, Wet Pipe Sprinkler System. The sprinkler hazard classifications shall be in accordance with MIL-HDBK-1008C, NFPA 13. Design densities, design areas and exterior hose streams shall be in accordance with MIL-HDBK-1008C. The sprinkler systems shall be designed and all piping sized with computer generated hydraulic calculations. The exterior hose stream demand shall be included in the hydraulic calculations. A complete sprinkler system design, including sprinklers, branch lines, floor mains and risers, shall be shown on the 60 percent and 100 percent drawings.

Provide installation and protection of common area kitchen range and hood in accordance with NFPA 96. Contractor shall use and edit Section 13965, Wet Chemical Systems.

The sprinkler service main shall be a dedicated line, separate from the domestic service. The main shall have an exterior post indicator valve with tamper switch reporting to the fire alarm control panel (FACP). The sprinkler entry riser shall include a double check backflow preventer, a fire department connection, and a wall hydrant for testing of backflow preventer. The sprinkler system shall include an indicating control valve, an alarm check valve, a water motor alarm and a flow switch reporting to the FACP. All control valves shall be OS&Y type and shall be provided with tamper switches connected to the FACP.

The Contractor shall edit UFGS Specification Section 13930, Wet Pipe Sprinkler System, for this project. This shall be submitted for review with the preliminary and final design submittals. These specifications shall be followed for the design and installation of the sprinkler systems.

The Contractor shall submit material data, hydraulic calculations, and shop drawings as required by Specification Section 13930 to the Contracting Officer for review and approval.

27.5 Exterior Hose Stream. Exterior hose stream demand shall be in accordance with MIL-HDBK-1008C. This shall be 250 gpm for light hazard and 500 gpm for ordinary hazard. Exterior hose stream demand shall be included in the sprinkler system hydraulic calculations.

27.6 Backflow Preventer. A double check backflow preventer shall be provided on the fire water main serving each building. This shall be located within the building. An exterior wall hydrant with OS&Y valve shall be provided to allow testing of backflow preventer at design flow as required by NFPA 13 1999, 5-15.4.6.1.

27.7 Fire Department Connection. A fire department connection shall be provided for each building with sprinkler protection. These shall be located to be directly accessible to the fire department, either on the front side or on the main street side of the building.

27.8 System Components and Hardware. Materials for the sprinkler system, fire pump system, and hose standpipe system shall be in accordance with Specification Sections 13930 and 13935 and with NFPA 13 and NFPA 230. Sprinkler system piping shall be black steel and shall be minimum Schedule 40 for sizes 2 inches and less and minimum Schedule 10 for sizes greater than 2 inches.

27.9 Seismic Protection shall be provided for this project. Sprinkler and fire pump piping systems shall be protected against damage from earthquakes. Seismic protection shall include flexible and rigid couplings, sway bracing, seismic separation assemblies where piping crosses building seismic separation joints, and other features as required by NFPA 13 for protection of piping against damage from earthquakes.

27.10 Fire Water Supply.

Water shall be supplied by mains of appropriate capacity and pressure to provide the building fire water demand in accordance with MIL-HDBK-1008C. The fire water demand is equal to the sum of the sprinkler demand, the hose demand and one-half of the domestic water demand. Exterior hose demand shall be in accordance with MIL-HDBK-1008C, 5.1.3. Water pressure and flow test data is listed in Appendix I of this document. If necessary to meet the fire flow requirements for this project, the proposer shall include in their proposal means to increase the available fire flow, such as increased water main line sizes or a complete fire pump installation.

If a fire pump installation is provided, it shall be designed in accordance with NFPA 20 and UFGS 13920, Fire Pumps. During design after award, the Contractor shall use and edit Section 13920. The installation shall include the fire pump and all appurtenances necessary to provide a complete system. This shall include a pump bypass line. The Contractor shall submit fire pump sizing and selection calculations, fire pump installation shop drawings, and catalog data for all piping and components of the fire pump installation to the Contracting Officer for review and approval.

After contract award, the Contractor shall perform a fire hydrant water flow test at the site to confirm that the resulting available fire flow is adequate to support the fire protection requirements of this project. During fire flow demands, the exterior water distribution system shall not be drawn down below 20 psi.

Refer to Civil Design for additional requirements.

27.11 Fire Detection and Alarm. Refer to Electrical Design for design requirements.

27.12 Fire Extinguishers. Refer to Architectural Design for design requirements.

27.13 Fire Hydrants. Refer to Civil Design for design requirements.

28. HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS.

28.1 Mechanical Design References, Codes, and Standards.

28.1.1 The design and construction of the mechanical systems for the Chapel and Education Facility, shall be in compliance with design criteria (latest edition) listed below, as required herein, and the referenced Unified Facility Guide Specifications (UFGS). Guide specifications are referenced in this RFP for their use in preparation of the design and shall be edited consistent with the criteria furnished. The most current edition of the codes, standards, and references shall be used for project design. Where there is a conflict between the RFP and the codes and standards the most stringent shall apply. When codes and standards are in conflict, the most stringent shall apply.

Design Criteria List:

- Savannah District Design Manual for Military Construction, dated May 2000.
- Savannah District Drafting Standards.
- Uniform Building Code
- Uniform Mechanical Code
- Army Technical Instructions (TI)
 - TI 800-01 Technical Instructions, Design Criteria
 - TI 809-04 Seismic Design for Buildings
 - TI 810-11 Heating, Ventilating & Air Conditioning (HVAC) Control Systems
- Army Technical Manuals
 - TM 5-785 Engineer Weather Data
 - TM 5-805-4 Noise & Vibration Control for Mechanical Equipment
 - TM 810-10 Mechanical Design Heating, Ventilating & Air Conditioning
 - TM 5-815-2 Energy Monitoring & Control Systems
- Department of Defense
 - Interim DOD Antiterrorism/Force Protection Construction Standards
- American Society of Mechanical Engineers (ASME).
 - B31.1 Power Piping
- Air Conditioning & Refrigeration Institute (ARI).
 - Std. 410 Forced-Circulation Air-Cooling & Air-Heating Coils
 - Std. 550 Centrifugal or Rotary Screw Water-Chilling Packages

- American Society of Heating, Refrigeration & Air Conditioning Engineers (ASHRAE), Inc. Standards (Latest Edition).

HVAC Applications
 HVAC Systems & Equipment
 Fundamentals
 Refrigeration

ASHRAE Standard 62-1999 Ventilation for Acceptable Indoor Air Quality
 ASHRAE Standard 90.1, 2001 Energy Standard for Buildings

- Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), Inc. (Latest Edition).

06 HVAC Duct Construction Standards - Metal & Flexible

- National Fire Protection Association (NFPA) Standards.

NFPA 90A Installation of Air Conditioning & Ventilating Systems

NFPA 90B Installation of Warm Air Heating & Air Conditioning Systems

NFPA 96 Ventilation Control and Fire Protection of Commercial Cooking Operations

NFPA 101 Life Safety Code

- All other codes and standards listed in Section 01010.

28.2 General. The mechanical systems design for this project shall be in accordance with ASHRAE Handbooks, TI 800-01 Design Criteria Technical Instructions, ASHRAE Standard 62 - Ventilation for Acceptable Indoor Air Quality, Savannah District Design Manual for Military Construction, Volume II of II, applicable NFPA Standards, The Fort Benning Preferences (see Appendix L), other applicable references listed within the RFP, and governing industry standards as applicable. The contractor's proposal will list all pertinent standards and specifications and their applicability to the project. Catalog cuts for major equipment will include manufacturer's published data stating that such equipment meets the applicable standard. Catalog cuts for major equipment shall be for the actual equipment proposed to be installed as indicated by the load calculations. The Proposer shall confirm the mechanical room(s) size with this equipment and all construction cost implications shall be considered. Deviations and installation of equipment other than proposed are only allowed subject to Contracting Officer approval. Mechanical equipment room(s) shall be ventilated for heat dissipation and shall be designed to minimize interior temperatures from exceeding 10 degrees F above outside design ambient temperature. As a minimum, the mechanical equipment room shall reflect the minimum clearance as specified by the equipment manufacturer in all five directions (all four sides and top). Equipment tube bundle and coil pull spaces shall be shown on mechanical room layouts. Mechanical room shall be adequate to allow the layout of equipment such that the removal or replacement of one major piece of equipment shall not require removal of adjacent equipment. Toilet rooms shall be directly heated, cooled, and exhausted. All exposed exterior water piping systems (i.e. chilled water) shall be provided with protective aluminum jacketing. Freeze protection design measures shall be provided to protect all interior and exterior piping systems, and equipment. Refrigeration equipment provided shall be equipped with low-ambient controls to allow equipment operation down to 20 degrees F. Roof penetrations required by HVAC design shall be located on the least public

sides of the building. The equipment types and systems are to be provided as described herein. These systems were confirmed by life cycle costs analysis and those type studies are not required by the selected Proposer.

28.3 HVAC Design Conditions.

28.3.1 Outside Design Conditions.

Location: Ft. Benning, GA
32°, 33' North Latitude
85°, 00' West Latitude
233 Ft. Above Sea Level

Heating Degree-Days (basis 65 °F): 2,709

Cooling Degree-Days (basis 65 °F): 2,066

Heating Design Conditions: 26 degree F DB

The minimum leaving air temperature for heating shall be 90 degrees F.

Cooling Design Conditions: 92 degree F DB / 76 degree F WB

Air Cooled Condensing Design Conditions: 95 degree F DB

28.3.2 General Inside Design Conditions (unless otherwise indicated).

Heating (Comfort Applications) 68 degree F DB, no humidity control

Heating (Freeze Protection, Mech Rms) 45 degree F DB

Cooling (Comfort Application) 77 degrees F DB/50% Relative Humidity

28.3.3 Room HVAC Functional Requirements. All interior spaces shall be heated, ventilated and air conditioned, except as noted herein. Interior conditions as indicated above, unless otherwise stated.

28.4 Cooling Systems Design. (Chapel)

28.4.1 District generated chilled water is not available at this site.

28.4.2 Air cooled chillers are to provide cooling for the Chapel. The chilled water system shall include two (2) chillers, one sized for not less than 66% and the other sized for 34% of the calculated total load (minimum). Two (2) pumps, each sized at 50 percent flow, shall be provided in the chiller pipe loop with variable frequency drive to vary the water flow, based on cooling demand. During low cooling demand the speed of the pumps shall be set for the small chiller flow requirement. During intermediate demand the speed of the pumps shall be set for the large chiller flow requirement. During full cooling demand the pump speed shall be set for the water flow requirement of both chillers.

28.4.3 A summer design cooling water temperature of 44 degrees F. will be circulated to cooling coils. The system chilled water temperature will be automatically reset upwards, based on the greatest AHU coil demand.

28.4.4 Piping will extend to the AHU's. Sectional shutoff and balancing valves will be provided in the main piping systems. The piping will be installed above ceilings and in partition spaces within the building. The above ground piping is proposed to be black steel with malleable steel fittings. Seamless copper, hard drawn tubing with wrought copper joints is proposed for pipe sizes 2 inches and smaller. Air conditioning condensate

piping will be constructed of seamless copper, hard drawn tubing with wrought copper joints and insulation.

28.4.5 Below ground chilled water piping will be a double wall factory fabricated system consisting of Schedule 40 PVC carrier piping, cellular insulation and high density polyethylene (HDPE) exterior jacket. Reinforced concrete thrust blocks will be provided at changes in direction.

28.4.6 Two freeze protection alternatives are acceptable. The first is an electric heat trace cable system on all exterior chilled water piping exposed to freezing temperatures. The second is a propylene glycol solution in the chilled water system. The volume of glycol in the chilled water system required for the winter design ambient conditions is approximately 20 percent.

28.5 Heating System Design. (Chapel)

*5

28.5.1 District hot water is not available at this site. The heating system will serve the central station AHU's and terminal (re-heat) needs. A ~~gas-~~ fired hot water boilers and pumps to circulate hydronic heating water to heat transfer coils in air handling units and system ductwork are required.

*5

Hot water will be generated through ~~two-a~~ cast-iron sectional boilers or ~~two-a~~ copper fin boilers with forced draft burners. ~~Each-The~~ boiler shall include capacity modulation. ~~Each boiler shall be sized for a minimum of 50 percent of the calculated load. Each-The~~ boiler will be equipped with an in-line circulating pump. The water will be distributed to heat transfer elements within the building by two constant volume pumps. A winter design heating water temperature of 180 degrees F. will be circulated to heating coils within the variable volume air terminal valves, and other heating devices.

*5

A ~~common~~ factory fabricated double wall flue system with barometric damper will be provided for the boilers and hot water heater.

Hot water piping will extend to the AHU's and to terminal heating devices. Sectional shutoff and balancing valves will be provided in the piping mains. The piping will be installed above ceilings and in partition spaces within the building. The piping is proposed to be black steel with malleable steel fittings. Seamless copper, hard drawn tubing with wrought copper joints is proposed for pipe sizes 2 inches and smaller.

*5

Emergency boiler shut-off switch(es) will be installed near the exit door(s) in accordance with ANSI/ASME CSD-1a, Control and Safety Devices for Automatically Fired Boilers.

Carbon monoxide sensors with visual and audible alarms shall be installed in each space containing a fuel burning device, such as boiler or water heater.

28.6 Heating System Design. (Education Facility)

28.6.1 District hot water is not available at this site. The heating system will serve the terminal (re-heat) needs. Gas-fired hot water boiler and pumps to circulate hydronic heating water to heat transfer coils in ductwork at the terminal boxes are required.

Hot water will be generated through a cast-iron sectional boiler with forced draft burner. Boiler shall have means of capacity modulation. The boiler will be equipped with an in-line circulating pump. The water will be distributed to heat transfer elements within the building by a constant volume pump. A winter design heating water temperature of 180 degrees F. will be circulated to heating coils within the variable volume air terminal valves, and other heating devices.

A factory fabricated double wall flue system with barometric damper will be provided for the boiler.

Hot water piping will extend to the terminal heating devices. Sectional shutoff and balancing valves will be provided in the piping mains. The piping will be installed above ceilings and in partition spaces within the building. The piping is proposed to be black steel with malleable steel fittings. Seamless copper, hard drawn tubing with wrought copper joints is proposed for pipe sizes 2 inches and smaller.

An emergency boiler shut-off switch will be installed near each exit in accordance with ANSI/ASME CSD-1a.

Carbon monoxide sensors with alarm shall be located in each space containing a fuel burning device, such as boiler or water heater.

28.7 Air Conditioning System Design. (Education Facility)

A packaged "cooling only" rooftop air unit is required to provide cooling, air handling, and air filtration. The unit will be arranged to provide cooling to the various areas via variable volume terminal boxes, each with hot water heating coils. This type system will provide individual zone control to each Classroom; it will not interfere with the current Force Protection requirements and it will not require floor space within the facility. The unit to be complete with internal air filters in accordance with the requirements of MIL-HDBK 1190 and ASHRAE Test Standard 52-76. The filters shall provide 30 percent efficient filtration. In the event of smoke, duct mounted smoke detectors shall shut down the fan per NFPA 90A requirements.

The RTU casing shall be double wall steel construction with internal insulation. The casing and components will be installed on a structural steel frame with lifting rings for hoisting. The unit will be mounted on a prefabricated curb accounting for the slope of the roof.

The drain pans and coil casings will be constructed of galvanized steel. Cooling coils are specified to be constructed of aluminum fins and copper tubing.

RTU to be provided with access to all internal components: fans, coils, filters, supply fan motor variable frequency drive, and controls.

Outdoor air shall be obtained through unit mounted hood or louvers. Outdoor air requirements are based on occupancy in accordance with ASHRAE Standard 62-1999.

A variable frequency drive shall control the speed of the supply fan and vary the duct static pressure.

28.8 Air System Design and Zoning. (All Buildings)

28.8.1 Air handling systems shall be zoned by functional requirements, operation schedules, environmental control conditions, and load characteristics. Each Conference, Classroom, Multi-Purpose Room, Auditorium, Computer Room, etc. shall have its own zone. Each Communications Room shall be conditioned by a separate split system DX unit.

28.9 Ventilation Systems Design. (All Buildings)

28.9.1 Ventilation for building occupants shall be provided in accordance with ASHRAE Standard 62-99. Ventilation air shall be injected into the building at each air handling unit upstream of the coils. The Classrooms, Auditorium and Activity Area ventilation shall be reduced as permitted by ASHRAE 62-99 for intermittent occupancy. Those spaces shall also have the ventilation rate varied by multiple CO2 monitors. Each unit serving other areas shall maintain a constant minimum outside air flow by electronic airflow measurement stations as required. Each unit serving Classrooms, Auditorium or Activity Area shall maintain the required flow by electronic airflow measurement stations. The outside air intake shall be located away from fumes including vehicle exhaust, toilet exhaust, etc. Exhaust systems shall be provided for all toilet rooms, copier rooms, bathrooms, janitor's closets, and other spaces as required. Rooms requiring exhaust systems shall be at a negative pressure relative to adjacent spaces. Provide an emergency shut-off switch in the control system for UFC 4-010-01. The location shall be accessible to the occupants and shall be located as approved by the user.

28.10 Utility Metering: Gas, Potable Water. (All buildings)

28.10.1 Potable water and gas shall be metered. Meters shall all have pulse outputs, data collection/communication capability and shall be compatible with Ft. Benning existing base wide utility management and control system. All meters shall be monitored by the DDC system. Meters shall determine consumption, and not rate-of-consumption. Electric meters shall monitor consumption and demand.

28.11 Electrical Rooms And Mechanical Rooms. (All buildings)

28.11.1 Mechanical rooms and electrical rooms shall be heated and ventilated. Ventilation rate of 10 and 20 air changes per hour minimum shall be used. A two-speed, thermostatically-controlled fan shall be provided to accomplish the 10 ac/hr and 20 ac/hr rates. The space shall be maintained at 45°F in winter and maximum of 10°F above outside design ambient in summer. Ventilation shall be positively introduced within the mechanical room.

28.11.2 The Storage Building near the chillers shall be ventilated as noted above, except the fan and other devices shall be explosion proof and the make-up air is not required to be positively introduced.

28.12 Telecommunications Rooms. (All buildings)

28.12.1 Each Telecommunications Room shall be air conditioned by an independent air cooled DX split system. The unit shall provide cooling 24 hours per day, 7 days per week. The unit shall maintain a space temperature of 72 degrees F. plus or minus 2 degrees F. The unit shall be sized to dissipate the heat generated by internal equipment and the building structure loads. Provide a space temperature high temperature alarm to report to the building temperature controls system.

28.13 System Maintainability. (All buildings)

28.13.1 Ensure that filters, controls, control valves, and coils are easily accessible for servicing and cleaning. Isolation valves shall be provided for each terminal unit, zone, branch, long runs, etc. as necessary for proper isolation and maintenance. Coils shall be fully removable without requiring demolition of any building components. Piping configuration at all coils shall include unions to facilitate easy coil removal.

28.14 Commissioning. (All buildings)

28.14.1 The Mechanical system commissioning shall be in accordance with UFGS Specification Section 15995A COMMISSIONING OF HVAC SYSTEMS. Commissioning requirements shall be clearly detailed on the design drawings and shall be clearly stated in the construction specifications to ensure the HVAC systems are properly installed, balanced and calibrated prior to building occupancy. Commissioning procedures shall be in accordance with ASHRAE Standards.

28.15 Direct Digital Controls. (All buildings)

28.15.1 It is proposed to use electronic direct digital control (DDC) controls for all equipment. Individual microprocessor based digital equipment controllers will be interconnected to a central local area network for building global communications from a central location. However, all controllers will have stand alone capability, with the respective equipment in each system served from a dedicated control panel. Controllers will be specified with battery backup and surge protection.

The Base has advised that one of two control manufacturers shall be used. The acceptable manufacturers are Johnson Controls or Ivensys.

The DDC system for this facility will consist of a central building controller connected to lower level application specific equipment controllers through a local area network cable system. A central host computer currently installed will be utilized for global system monitoring and remote system setpoint adjustment. The central building controller in this facility will interface to the existing operator's workstation through a phone modem. However, the DDC controllers will have stand alone operational capability, with the respective equipment related to each system served from a dedicated control panel. The central building controller will be equipped to connect to a laptop computer for local setpoint adjustment.

Based on the light torque duty requirements of the control damper and valve operators, it is recommended to provide electric operators. Control valves on all new heat transfer equipment will be three-way.

Individual room temperature control is proposed to be provided through air terminal valves and reheat coils within the supply ductwork system. An application specific controller and room sensor, with local timed override, will be indicated/specified for each air terminal valve. Certain spaces will be indicated to receive unit heaters. Local thermostatic control will be provided for each.

Individual DDC controllers are indicated for each central station AHU. Monitoring and adjustment of all DDC points will be available from the workstation computer.

Mechanical energy using devices will be provided with metering to monitor energy consumption. Totalizing flow measuring meters will be provided on utility services.

DDC design shall be in accordance with CESAS Standards.

28.15.2 Stand alone equipment, such as chillers supplied with packaged controls, shall be installed with all necessary additional communications support equipment for interface with the post-wide DDC system.

28.16 Acoustical Criteria. (All buildings)

28.16.1 Systems shall be designed to meet the following noise criteria:

<u>Area</u>	<u>NC Level</u>
Offices	35
Lobbies and Corridors	40
Conference Rooms and Classrooms	30
Auditorium and Activity Center	25

Acoustical treatments such as duct lining and sound attenuators shall be used to achieve these levels. Submit data to prove compliance with NC levels. Any spaces not specifically listed above shall be coordinated with the user. Vibration transmission from equipment shall be controlled with the use of vibration isolation equipment as required.

28.17 Controls System Specifications. (All buildings)

28.17.1 Automatic temperature controls shall be designed in accordance with specification Section 15951 Direct Digital Control for HVAC. All control devices shall be labeled with laminated plastic tags using unique identifiers, which are cross referenced to the control drawings.

28.18 Energy Conservation. (All buildings)

28.18.1 Public Law 100-615 and Federal Regulations 10 CFR 435 Subpart B, require Federal buildings to be designed and constructed to reduce energy consumption in a life-cycle, cost-effective manner using renewable energy sources when economical. Submittals from the successful bidder shall be in compliance with above and address energy conservation features such as variable frequency drives, etc.

28.19 HVAC Calculations. (All buildings)

28.19.1 Design Criteria. Design calculations for determining capacities of all equipment, mechanical systems and components shall be performed by the Proposer, and shall be supported with a complete design analysis. Proposer shall submit block load calculations. Capacity of all mechanical system components shall be coordinated with the electrical designer. The Design Analysis shall contain all explanatory material giving the design rationale for any decisions that would not be obvious to an engineer reviewing final drawings and specifications. Except as indicated herein, calculations for sizing HVAC systems shall be in accordance with ASHRAE Handbooks, TI 800-01 Design Criteria Technical Instructions, ASHRAE Standard 62 - Ventilation for Acceptable Indoor Air Quality, and Savannah District Design Manual for Military Construction, Volume II of II, NFPA Standards. ASHRAE-based computer generated loads shall be provided and must be submitted with complete input and output data summaries. The design shall reflect heating and cooling capacities based on the design conditions indicated herein. The space (airflow) pressure relationships shall be maintained. The overall building pressurization shall be positive to minimize effects of infiltration.

28.19.2 Internal Loads and Heat Gains. (All buildings)

28.19.2.1 The successful proposer is required and responsible for determining all miscellaneous internal loads (i.e. electronic equipment, equipment layout and locations, etc.) for all areas. These shall be confirmed by the user. Coordination and consultation with the User is required in assessing miscellaneous internal load requirements. Computers, instruments, communication equipment, and A/V equipment are located throughout the facility. Each individual office and each workstation shown on Architectural drawings shall be assumed to include one (1) personal computer for internal load calculations (150 watts each). Documentation and miscellaneous internal load requirements shall be provided within Design Analysis. For block load

calculations by the proposers, assume 0.5 watts per square foot for miscellaneous power.

28.20 Omitted.

28.21 Energy Conscious Design Features Summary - Mechanical/Electrical (All Buildings)

28.21.1 Daylighting design with photocell operation for fixtures in areas with natural daylight.

28.21.2 Fluorescent fixtures provided with electronic ballasts and 32W T-8 lamps. Electronic ballasts will have 0.9 power factor and 5% total harmonic distortion.

28.21.3 The use of incandescent fixtures will be limited to areas requiring dimming.

28.21.4 Occupancy sensors will be provided in low occupancy type rooms (i.e. storage rooms, toilets, janitor's closets, etc.).

28.21.5 Exterior lighting will be controlled by a lighting contactor with photocell on, time clock off operation.

28.21.6 High efficiency motors and motor controllers.

28.21.7 Direct digital controls (DDC) will be utilized. This type of system will enable precise control and energy monitoring of mechanical environmental systems.

28.21.8 Carbon Dioxide (CO₂) Sensors in the Classrooms, Auditorium and Activity Center shall control the ventilation air quantity introduced by the air handling units.

28.22 Energy Sources. (All Buildings)

28.22.1 Electricity is provided to the site from Flint EMC and natural gas is also available on Base. Fuel oil is available through vehicular delivery, but will not be considered. Central district heating and cooling utilities are not available from a Central Energy Plant for this site.

28.22.2 Rate structures for all available utilities will need to be confirmed with the DPW energy personnel.

28.23 U-Values. (All Buildings)

28.23.1 Utilize the U-values presented below as a starting point. These values may be modified if a life cycle cost analysis indicates that a more cost effective value should be used. The life cycle cost analysis shall be based on the Department of Energy (DOE) Federal Energy Management Program (FEMP) criteria according to the provision of the latest version of Code of Federal Regulations, 10 CFR 436A. For guidance on the methodology, refer to National Bureau of Standards Handbook 135, Life Cycle Costing Manual for the Federal Energy Management Program.

Nominal U-Values Btu/square foot - °F for Exposed Floors, Ceilings, and Walls

Heating Degree Days	Opaque Walls	Gross Walls	Ceiling/Roof	Floor
2,709 (Ref 65°F)	0.120	0.217	0.066	0.074

The U-Values above are taken from T1 800-1, table 11-4A in weather region 8. Coordinate actual U-values with the architectural design of the facility.

28.24 Mechanical Equipment. (All Buildings)

28.24.1 Mechanical equipment shall be designed in accordance UFGS guide specifications listed in this section of mechanical design and included in the appendix volumes. The equipment described below is a minimum. All materials and equipment provided shall be standard catalogued products of manufacturers regularly engaged in the production of such materials and equipment shall be of the manufacturers' latest standard design. Equipment shall comply with the requirements of Underwriter's Laboratories, Inc. (UL), Air Conditioning Refrigeration Institute (ARI), American Society for Testing and Materials (ASTM), National Electric Manufacturer's Association (NEMA), American National Standards Institute (ANSI), National Fire Protection Association (NFPA), or other national trade associations as applicable.

28.24.2 All pieces of floor mounted mechanical equipment shall be installed on a 6 inch thick concrete equipment pad. Provide pad 6 inch larger than equipment footprint on all sides. Install do well pins into floor slab prior to pouring equipment pad. All suspended equipment shall be properly supported according to the manufacturer's instructions. Provide trapeze hangers for larger pieces of equipment. Provide adequate clearance around all pieces of equipment for periodic maintenance, inspection and cleaning. Service of one piece shall not require disturbance of adjacent equipment.

28.24.3 Each piece of motorized equipment shall be provided with vibration isolators. Nominal deflection and natural frequency of isolation equipment shall be selected based upon equipment size and structural attachment details.

28.24.4 All strainers and air separators are to be equipped with blowdown valves and piped to a floor drain.

28.24.5 The mechanical room shall be separate from the electrical utility room and be accessible from an exterior door. The mechanical room shall house any central equipment for facility comfort conditioning.

28.24.6 Fans or other equipment (except boiler flue) is not acceptable on the metal or shingled sloped roofs. Exhaust fans will be provided for areas that require 100 percent exhaust directly to the outside. These areas include toilet rooms, janitor closets, dark rooms, and other areas as required by the design criteria. Ducted exhaust air systems are proposed; from room inlets to the exhaust fan locations. Vent sets are proposed; located on enclosed accessible mechanical mezzanine structures within the ceiling/roof space, ducted to exterior louvers in architectural elements. All of the exhaust ductwork shall be specified to be sealed.

28.24.7 The Kitchen range exhaust hood shall be commercial stainless steel type with fire protection system. Exhaust ductwork shall be 16 gauge welded with exhaust fan on flat roof. Make-up air shall be ducted to the Kitchen from a roof mounted make-up air unit with gas heat. All items shall comply with NFPA 96. Coordinate roof mounted fan and make-up unit with the architectural design.

28.25 Air Handling Units. (Chapel)

28.25.1 Chapel:

28.25.1.1 Central station air handling units are proposed to supply a mixture of return and outside air for climate control and ventilation of the

spaces in the building. Each air handling unit will be furnished with chilled water coils to cool and dehumidify the circulated air. The units will contain supply air fans, and return air fans where necessary. Each variable air volume (VAV) fan will be controlled by a variable speed motor controller.

28.25.1.2 The AHU casings will be double wall steel construction with internal insulation. The casing and components will be installed on a structural steel frame. The AHU's are indicated to be equipped with demount seams in the casing sections to facilitate installation and removal of the equipment; dimensions will not exceed the space available for removal from the building.

28.25.1.3 Supply fan section shall be equipped with non-overloading centrifugal fan mounted on a steel base frame. Fan base shall be isolated from air handling unit base rails by the use of housed spring isolators. Fans shall be V-belt driven by belt drives sized for 150% of design power requirement. Provide adjustable sheaves for fans up to 20 Hp.

28.25.1.4 The drain pans and coil casings will be constructed of galvanized steel. Cooling coils will be specified to be constructed of aluminum fins and copper tubing.

28.25.1.5 Maximum coil face velocities shall be limited to 500 feet per minute. Mixing boxes shall be factory or field fabricated and configured with dampers to promote mixing of return air and outdoor air streams. Control dampers shall be constructed to provide no more than 10 CFM/ft² air leakage at 4" water column. Angled filter section may be included as part of the mixing box.

28.25.1.6 AHU's will be provided with access to all internal components: fans, coils, filters, and controls. Where required for rigging, the AHU coils will be vertically split for removal from both sides of the units.

28.25.1.7 Outdoor air will be obtained through exterior louver elements. Electronic airflow measuring apparatus (AFMA) will be indicated in the outdoor air ducts, and at the supply, relief and return fan inlets for airflow control. Outdoor air requirements will be based on occupancy in accordance with ASHRAE Standard 62-1999. The AFMA shall comply with TI 810-11.

28.25.1.8 The Chapel shall be served by four (4) air handling units as described. A constant volume air handling unit shall serve the Auditorium area and a separate constant volume air handling unit shall serve the Activity area. A variable volume air handling unit utilizing variable volume air terminal valves with hot water heating coils shall serve the Reception, Chaplain Offices, Resource Center and Toilets. A variable volume air handling unit utilizing variable volume air terminal valves with hot water heating coils shall serve the Classrooms, Multi-Purpose Rooms, etc.

28.25.2 Education Center.

28.25.2.1 The air handling unit for the Education Center is a packaged, air cooled, direct expansion, "cooling only" rooftop unit. The unit shall be double wall construction with insulation, designed for outdoor use. The unit shall be complete with fans, motors, plenums, compressors, condensers, filters, outside air intake, safety controls, prefabricated roof curb and all other items required for a complete operating system.

28.26 Air Distribution. (All Buildings)

28.26.1 Ductwork shall be constructed of sheet metal to SMACNA HVAC Duct Construction Standards, latest edition. Medium pressure high velocity supply

ductwork is proposed for the main supply duct runs between variable air units and terminal air valves. The supply ductwork connects to a series of air terminal valves equipped with inlet control dampers, velocity sensors, controllers, and hydronic hot water heating coils. The terminal units serve low velocity ductwork to the ceiling supply air outlets. The air terminal valves will be factory fabricated, single wall steel construction with internal lining. The hot water heating coils will be aluminum fin and copper tube construction. The variable volume air terminal valves will be equipped with minimum ventilation airflow set points. The ceiling diffuser layout and performance will be assessed at the turndown air quantity to assure adequate distribution at low airflows. Louvered face ceiling supply air diffusers will be provided with a minimum of four concentric elements located within the face. Flexible supply ductwork runouts to terminal devices shall be limited to 5 feet in length, and shall be pre-insulated. Fiberglass duct shall not be used. Each duct branch shall be fitted with a manual balancing damper. All ductwork shall be located above ceiling, supported from roof structures. Return air systems shall be ducted, shall be sheet metal, and will be utilized from room return registers to the AHU return inlets. The high velocity ductwork is specified to be sealed and leak tested, except that duct downstream of air terminal valves will not require leak testing. Ductwork leak tests will not be required for 2 inch w.g. and below pressure classes.

28.26.2 Low pressure distribution ductwork, including that associated with constant volume air handling units, shall be installed to SMACNA pressure class 2" wg, seal class C, and leakage class 24 as a minimum. Test ductwork in accordance with SMACNA 10. Access must be provided to all devices or areas that may require periodic inspection, including but not limited to balancing devices, motor operated dampers, flow measuring stations, smoke/fire dampers, etc.

28.26.3 Provide systems with filters, plenums, and all safety controls. Filtration will be provided at the air handling unit in accordance with the requirements of MIL-HDBK 1190 and ASHRAE Test Standard 52-76. The pre-filters will consist of a 4" thick pleated filter to provide 30% efficient filtration; located on the inlet side of the air handling unit. Intermediate stage filters of 80% efficiency will also be provided in the AHU downstream of the pre-filter. In the event of smoke, duct mounted smoke detectors shall shut down the fan per NFPA 90A requirements.

28.26.4 The return air from the Auditorium and the Activity Center shall be taken from multiple locations within the area served. These intakes shall be located low, approximately 2'-0" AFF.

28.27 Duct Insulation. (All Buildings)

28.27.1 All supply, return, and outside air ductwork shall be insulated, and shall include vapor barrier. Exposed heating only or exposed return air ductwork shall not be insulated.

28.28 Miscellaneous Fans. (All Buildings)

28.28.1 Exhaust fans shall be cabinet type, inline, roof or wall mounted. Roof mounted fans are not acceptable on the metal roof. Fans shall be V-belt driven by belt drives sized for 150% of design power requirement. Provide adjustable sheaves for fans up to 20 Hp. Small fans not available with V-belt drive may be directly driven. Motor selection shall permit non-overloading operation at all conditions. All fans shall be provided with vibration isolators to decouple the motor assembly from the fan housing. Suspend fans with vibration isolators from building structure. Fans or other equipment located on the flat roof shall be low profile type and shall be located to conform with the architectural design.

28.29 Heating Equipment. (Education Facility)

28.29.1 The hot water heating systems shall include gas-fired hot water boilers and circulation pumps. Manufacturer's standard packaged operation controls shall be provided to handle all aspects capacity modulation and safeguarding. Pumps shall be base mounted or in-line type and selected for non-overloading operation at all conditions. Provide a standby/redundant pump. Provide hot water bypass feeder, expansion tanks and air separator tank.

28.30 Piping and Accessories. (All Buildings)

28.30.1 Heating water piping shall be Type L copper or ASTM A53 SCH 40 black steel. Ball valves shall be utilized for sizes up to 3", larger piping shall be equipped with gate valves or butterfly valves. Piping supports shall be in accordance with MSS SP-59 and MSS SP-69. System shall include an air separator, expansion tank, chemical bypass feeder and makeup water connections. Equip circulation pumps with strainers, check valve, balance valve, flexible couplings and isolation valves to permit pump maintenance. Pipe pump body drain and air vents from expansion tank to nearest floor drain. Provide pressure gages arranged such that pump differential pressure may be witnessed. Entire pump assembly shall be mounted on a structural steel frame equipped with housed spring vibration isolators. Provide manual or automatic waterflow control valves at each coil and balancing valve in each loop of piping branch.

28.30.2 Heating hot water piping shall be insulated with 1-1/2" glass fiber insulation. Piping passing through hangers shall be supported on insulation shields.

28.31 Chiller Equipment. (Chapel)

28.31.1 The chilled water system shall include exterior and interior mounted equipment. Chiller components exterior to the building shall be protected from freezing through the use of a glycol solution or heat tape. Manufacturer's standard packaged controls shall be provided to handle all aspects of compressor staging and safeguarding. Each chiller shall have means of capacity modulation. Pumps shall be base mounted and selected for non-overloading operation at all conditions. Close coupled pumps are not acceptable. Each pump shall have variable frequency drive to provide 3-stage flow control. Provide motor operated valves to automatically isolate chiller staging.

28.32 Chilled Water Piping. (Chapel)

28.32.1 Chilled water piping system shall include an air separator, expansion tank, chemical bypass feeder, makeup water connections, chemical treatment systems, surge tank if system volume is not adequate, temperature and pressure ports, temperature and pressure gages, flow switch, and all other required appurtenances. Circulation pumps shall be equipped with strainers, check valve, balance valve, flexible couplings and isolation valves to permit pump maintenance. Pipe pump body drain and air vents from expansion tank to nearest floor drain. Provide pressure gages arranged such that pump differential pressure may be witnessed. Piping and valve material shall be similar to that specified above for heating water.

28.32.2 All chilled water piping and exterior chilled water piping shall be insulated. Piping passing through hangers shall be supported on insulation shields.

28.33 Thermostats. (All Buildings)

28.33.1 A Thermostat shall be provided for each constant volume air unit, each VAV terminal unit, and split system air unit. Small rooms with similar load profiles, may be grouped together on a single thermostat. Thermostat shall not be located in location subject to unrepresentative temperatures. Each classroom, conference room or training room shall have a separate comfort zone.

28.34 Unified Facility Guide Specifications (UFGS). (All Buildings)

28.34.1 The project specifications shall be prepared using Unified Facility Guide Specifications (UFGS). The guide specifications shall be edited and adapted by the designer to fit each individual project in accordance with the project requirements. The designer is to delete the inapplicable portions of the guide specifications and revise and/or supplement, as required, the applicable portions to provide a complete project specification. Major deviations (such as use of a non-UFGS specification, or significant re-writing of a USGS specification) will not be allowed without prior approval from the Savannah District. If additional specification sections are required, contact the Savannah District to see if a guide specification exists. If a guide specification does not exist, the Design/Build Contractor will prepare job specific specifications. Specifications sections shall be edited and submitted at the Final Review stage or earlier. Sections shall be submitted in hard copy form that indicates the changes being added and those to be deleted. For example if Microsoft Word is used, this feature is located under "Tools" "Track Changes" "Highlight Changes".

28.35 Seismic Protection. (All Buildings)

28.35.1 Seismic protection (based on the seismic zone and geographical location of project; Fort Benning is located in Seismic Design Category B) shall be provided for this project. Design requirements shall be in accordance with Army Technical Instructions TI 809-04, Seismic Design for Buildings, 31 Dec 1998. Detailed narrative and documentation shall be provided in Design Analysis to support the seismic protection design.

28.36 Cathodic Protection. (All Buildings)

28.36.1 Cathodic protection and protective coatings shall be provided for the following buried or submerged ferrous metallic structures regardless of soil or water resistivity in compliance with the National Association of Corrosions Engineers (NACE) criteria and standards.

- (1) Natural gas and propane piping
- (2) Fire protection piping
- (3) Ductile or cast iron pressurized piping under floor (slab on grade) in soil
- (4) Underground heat distribution and chilled water piping in ferrous metallic conduit in soils with resistivity of 30,000 ohm-cm or less.
- (5) Steel casing for underground hydraulic elevator jack
- (6) All fire hydrants and materials subject to corrosion.

28.37 Quality and Workmanship of Mechanical Equipment, Piping systems, Materials and System Components. (All Buildings)

28.37.1 The project specifications form the basis for the required level of workmanship and quality of all equipment, piping systems, materials, and system components provided for this project. All materials and equipment provided shall be standard catalogued products of manufacturers regularly engaged in the production of such materials and equipment shall be of the manufacturers' latest standard design. All products shall be supported by a

service organization. All mechanical system components shall be environmentally suitable for the intended application. All floor-mounted equipment shall be installed on concrete equipment pads. Equipment pads shall extend a minimum of 6 inches beyond the footprint of the equipment on all sides. All suspended equipment shall be properly supported according to the manufacturer's instructions. Vibration isolation devices shall be provided for all equipment which house rotating components, and shall be in accordance with equipment manufacturer's recommendation.

28.38 Mechanical Systems Maintainability and Accessibility. (All Buildings)

28.38.1 Accessibility features (i.e. doors, access panels, etc.) shall be designed and included in this project as required to allow complete access to all mechanical systems and system components which are concealed, or require adjustment, inspection, maintenance, and replacement. Provide adequate clearance around all pieces of equipment for periodic maintenance, inspection and cleaning. Service of one piece of equipment shall not require disturbance of adjacent equipment. Louvers into air handling unit rooms shall be removable to allow equipment access and shall be sized for the equipment installed.

28.38.2 Mechanical Room shall be adequate to allow the layout of equipment such that the removal or replacement of one major piece of equipment shall not require removal of adjacent equipment. Provide adequate clearance around all pieces of equipment for periodic maintenance, inspection and cleaning. Service of one piece shall not require disturbance of adjacent equipment.

28.39 Work Coordination. (All Buildings)

28.39.1 The contractor is responsible for insuring that the installation of all mechanical features required is coordinated with the work of all other trades.

28.40 Testing, Adjusting, and Balancing (TAB) of HVAC Systems. (All Buildings)

28.40.1 All HVAC systems shall be tested, adjusted, and balanced in accordance with the requirements of AABC or NEBB Procedural Standards. UFGS Specification Section 15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS forms the basis for HVAC system TAB. The TAB Firm shall be either a member of AABC or certified by NEBB, and certified in all mechanical system categories applicable to this project. The TAB Standard shall be used for all aspects of TAB.

28.40.2 A comprehensive test and balance (TABS) effort of the entire facility will be required.

28.40.3 All new airside systems require TABS in order to validate space pressure relationships, pressure relationships between departments, and the pressure relationships between interior and exterior spaces.

28.40.4 Air quantities will be indicated for each distribution device. Operating conditions of all air moving equipment will be scheduled. Outdoor air dampers will be adjusted to correspond to the building exhaust air quantities.

28.40.5 All new waterside equipment requires TABS in order to verify energy distribution and consumption. Water quantities will be indicated for each heat transfer element and pump.

28.40.6 Commissioning of all new mechanical equipment will be conducted. The commissioning effort will verify that system components are adequately installed, are operating within the tolerances of the design, control components are calibrated, and that the TABS work was conducted effectively. Commissioning shall be done in accordance with the requirements of UFGS 15995, COMMISSIONING OF HVAC SYSTEMS.

29. ELECTRICAL DESIGN

29.1 Codes and Standards

The design and construction of the electrical systems shall be in compliance with: (1) National Fire Protection Association Standards, (2) the rules and recommendations of ANSI C2, (3) as required herein, and (4) the referenced Unified Facility Guide Specifications (UFGS). Guide specifications are referenced in this RFP for their use in preparation of the design and shall be edited consistent with the criteria furnished. The most current edition of the codes and standards shall be used for building construction and life safety design. Where there is a conflict between the RFP and the codes and standards the most stringent shall apply. When codes and standards are in conflict, the most stringent shall apply. Standards and codes are listed in the guide specifications. When codes and standards are in conflict, the most stringent shall apply.

29.1.1 The 60% and Final Design submittals shall meet the drawings, specifications and design analysis formats and requirements set forth in the Design Manual for Military Construction.

29.2 Demolition of Existing Site Electrical and Communications

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29.2.1 Demolition of the aerial power ~~and aerial communications~~ lines, underground power, power line poles, light fixtures on power line, poles, guy wires, and pole mounted transformers will be by the local utility company Flint Electric. Demolition of the telephone lines shall be by Bell South. Demolition of the data lines shall be by Base DOIM. Demolition of the cable lines shall be by Time Warner. Contractor shall coordinate schedule with the respective owners of the utilities.

29.2.2 Demolition of any of the underground telephone lines, ductbanks, manholes, and any other items not specifically identified to be removed by Flint Electric in paragraph 12.2.1 shall be by the Design/Build Contractor.

29.2.3 DOIM is to be contacted for them to disconnect the telephone service before removing any telephone service.

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29.2.4 The primary line that runs through the sites will have to be replaced with new underground lines. These replacement lines will have to be built first before these existing lines can be removed. Contractor shall coordinate routing and schedule with Flint EMC.

29.2.5 The Design/Build Contractor shall verify the demolition shown on the drawings and shall coordinate with Flint Electric after Contract Award.

29.3 .Site Electrical

29.3.1 General

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29.3.1.1 Flint Electric will provide the new aerial primary lines, primary line poles, pole line hardware, underground primary cables, transformers, pad mounted sectionalizing cabinets, primary switches and meters in accordance with the Base standards. Flint Electric will also connect the secondary cables in the transformers for the new buildings and chillers and will provide and install the end fittings on the secondary cables at the transformers. The Design/Build Contractor shall provide the ductbank and ~~manhole system and secondary cables~~ for the secondary system. Flint Electric will provide the equipment pads. The Design/Build Contractor shall coordinate with Flint Electric after Contract Award and shall show the final locations of the transformers and pad mounted sectionalizing cabinets and primary switches on the Electrical Site Drawings. The equipment's pads shall be located a minimum of 15 feet from the buildings. Flint EMC will provide a-built drawings showing locations of all new site electrical facilities.

29.3.1.2 The Design/Build Contractor will provide a copy of the final load analysis for each building and chillers for Flint Electric to size the transformers. Flint Electric will then provide the transformer impedance for the Design/Build Contractor to use in his design analysis. Final coordination and point of contact with Flint Electric will be after contract award. Any questions involving Flint Electric before contract award will be directed to the point of contact identified in the RFP.

*2

~~2912~~.3.1.3 Any outages on the existing systems ~~to~~ shall be scheduled for an off peak time (night, weekend, holiday) to be determined by the Ft. Benning's DFEL (Directorate Facility Engineering Logistics). Full preparation shall be done before the outage to keep the downtime duration to a minimum. Flint Electric shall schedule all work items requiring an outage on the same feeder to be accomplished concurrently during the single outage. All coordination with the Ft. Benning's DFEL shall be done through the Contracting Officer's Representative. Should Flint EMC Personnel be required on site for after hours work due to contractor scheduling, the contractor shall be responsible for overtime pay of Flint Personnel.

29.3.1.4 The landscape architect shall be consulted to provide appropriate screening of pad-mounted transformers, sectionalizing cabinets and primary switches.

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~~2912~~.3.1.5 Pad-mounted sectionalizing cabinets and primary switches shall be provided to allow base maintenance personnel to readily isolate problem cables and/or transformers. Primary cable shall be looped thru the primary sectionalizing cabinets and primary switches.

29.3.2 Chapel

29.3.2.1 The construction of the new facility will require the removal of a portion of the existing overhead power distribution system and installation of a new underground duct-bank. System continuity shall be maintained. Refer to the 08 April 2002 version of the anti-terrorism codes for additional criteria.

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29.3.2.2 A minimum two-way 4-inch ~~concrete~~ duct-bank (one conduit for the phase conductors, the other for a spare) shall be provided for the primary distribution system. The primary distribution system shall be routed through the site using primary sectionalizing cabinets and primary switches as required. The duct bank shall be a minimum of ~~40~~ 24 inches below grade.

Contractor shall confirm final grade prior to installation of primary ductbank by Flint EMC.

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29.3.2.3 The point of connection to the 12.47Y/7.2Kv, 3 phase, 4 wire overhead distribution system will be obtained from an existing power pole located on Ingersoll Street north of Burr Street. The existing pole will be retrofitted with a new riser to serve the Chapel and as transition point from overhead to underground to maintain circuit continuity along Ingersoll Street. ~~A minimum two way 4 inch concrete encased duct bank (one conduit for the phase conductors, the other for a spare) shall be provided from the manhole to the pad mounted transformer.~~ A second point of connection will be to an aerial pole line south of the chapel site that currently serves the sports complex. PVC conduit will be installed for the primary ductbank system and an above ground sectionalizing cabinets will be utilized.

29.3.2.4 Manholes shall have the following dimensions: 8 ft X 8 ft X 7 ft high. Minimum cover opening shall be 32 inches. All manholes shall have sumps. Primary manholes shall have four 5-inch cast-in terminators with end bells on each side of the manhole. Precast-concrete manholes shall have the required strength established by ASTM C 478. Frames and covers shall be made of gray cast iron and a machine-finished seat shall be provided to ensure a matching joint between frame and cover. All frames and covers shall be rated for H20 wheel loading. Cast iron shall comply with ASTM A 48, Class 30B, minimum.

29.3.3 Religious Education Facility

29.3.3.1 The point of connection to the 12.47Y/7.2 kV, 3 phase, 4 wire overhead distribution system will be obtained by intercepting an existing underground ductbank south of the new facility and on the east side of Brockman Street. The existing ductbank appears to be routed in a southeasterly direction towards an existing manhole located on the south side of Wold Avenue. This ductbank transitions from underground to overhead at a power pole on Brockman Street and proceeds in a northerly direction towards Lauber Street.

29.3.3.2 The construction of the new facility will require the removal of a portion of the existing overhead power distribution system and installation of a new underground ductbank system to maintain continuity to upstream circuits. Proceeding in a northerly direction from the intersection of Wold Avenue and Brockman Street, the first three existing power poles and overhead power lines on the east side of Brockman Street will be removed. The first pole is fitted with a 12.47Y/7.2 kV, 3 phase, 4 wire riser, which serves as transition point from underground to overhead primary distribution, and an overhead 120/240V service lateral to Building 239. The second pole, No. BL8003011 is fitted with a 3-way primary sectionalizing switch, overhead primary distribution line, overhead 120/240V service laterals to Building 239 and Gowdy Stadium, and 60A, 240V disconnect switch that apparently serves power to the Field of Four Chaplains. The third pole, No. T80603071, is fitted with three (3) overhead distribution type transformers, 12.47 kV - 120/240V that serve Building 239, Gowdy Stadium and Doughboy Field.

29.3.3.3 The new work will consist of intercepting the existing ductbank, installing two new poles Class II, 45 feet tall, at a distance 33 feet minimum from the Religious Education Facility. One new pole will be fitted with a 12.47Y/7.2 kV, 3 phase, 4 wire riser (underground to overhead), transformer bank with secondary metering and service lateral riser (overhead to underground) via conduit in concrete to serve the new facility.

29.3.3.4 The overhead primary distribution line will be extended to another new power pole which will be fitted with the relocated transformer bank that serves Building 329, Gowdy Stadium and Doughboy Field and the relocated 3-way primary sectionalizing switch. Two new risers (overhead to underground) will be provided, primary distribution and service lateral conductors will be extended via a 2-4" ductbank in a northerly direction to the next upstream power pole to remain from pole No. T80603071. One duct will be for primary distribution, the other for the service lateral to Doughboy Field. The existing power pole will be retrofitted with two risers (underground to overhead) for primary distribution and service lateral conductors to connect to existing circuits.

29.4 Site Communications

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29.4.1 ~~A four-inch duct bank will be provided from each facility's Telecommunications Room and extended to a manhole. One of the 4 inch conduits shall be fitted with innerduct. Two four-inch ducts, one with four one-inch innerducts, will be provided from the Chapel Telecommunications Room to an existing manhole at the corner of Ingersoll and Carpenter Streets. Two four-inch ducts, one with four one-inch innerducts, will be provided from the Education Facility Telecommunications Room to an existing handhole north of Lauber Street.~~ The duct bank shall be concrete encased under paved areas. Exact location shall be coordinated with Fort Benning's DOIM through the Contracting Officer's representative. An additional 4-inch conduit will be provided from each facility's Telecommunications Room and stubbed 5'-0" outside the building for CATV. The successful Design/Build Contractor shall coordinate work with Time Warner, local CATV supplier, to ensure CATV cabling plant is extended to each facility. Duct banks shall be a minimum 24 inches below grade. A pull wire shall be provided in all empty ducts. Install polyurethane fire retardant foam duct seal in all ducts and innerducts entering the facility.

29.4.2 The DOIM will extend the fiber and copper outside cabling plants to each facility and make final terminations.

29.4.3 Manhole/Duct Bank

The type of manholes will be 38Y-J4. Distance between manholes shall be no greater than 600 feet apart with a maximum of 100 feet leeway (either shortening or lengthening the distance) for buildings and other obstructions if it does not violate the cable reel lengths for the cables to be installed. Each manhole will require a sump, ground rod, straps and cable racks. A single line diagram depicting the manhole and ductbank system for the project will be required. Manhole elevations and elevations of duct lines entering manholes will be shown. Manholes located in traffic areas shall be design for an H20 wheel loading as defined by AASHTO HB-13.

29.4.4 Coordinate the exact elevation, placement and orientation of communications manholes with DOIM through the Contracting Officer's Representative. Coordinate the tie-in of new ducts with the Fort Benning's DOIM through the Contracting Officer's Representative. The ducts shall be placed in the lowest terminators. No conduit crossovers in the telephone manholes will be allowed.

29.4.5 Manholes and ductbank systems must be completed (to include pumped out and clean), inspected and accepted by the DOIM at least 6 months prior to the Beneficial Occupancy Date for the project.

29.4.6 For additional criteria, see Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide.

29.5 Utility Routing

29.5.1 All power and communications ductlines shall be concrete encased under all paved areas and any other areas subject to vehicular traffic. Jack and bore under all existing roads crossed.

29.5.2 Coordinate the installation of the underground electric and communication lines with all other new utilities which shall include but not be limited to: power, communications, storm drains, sanitary sewers, water lines, steam lines, high temp water lines, chilled water lines, gas lines, and any other utilities. The minimum separation between electric or communication lines and other utility lines shall be 36 inches vertically and 36 inches horizontally when running adjacent. If utilities are crossing, minimum separation shall be 12 inches vertically. In the case of concrete encasement, the clearances shall be measured from the outermost dimension of the utility line and shall have suitable supports on each side of the upper line to prevent transferring any direct load onto the lower line.

29.5.3 Prior to commencing work on any new underground power or communication line, the Design/Build Contractor shall stake the route of each line and indicate the exact location of all new ducts, primary sectionalizing cabinets and switches, manholes and transformers for approval by the installation's DPW and DOIM, and by the Contracting Officer's Representative.

29.5.4 The routing of the secondary and communications service ductlines into the buildings shall be coordinated with the structural footings to avoid any conflicts.

29.5.5 New underground utilities including manholes shall be located outside the tree drip lines of existing trees scheduled to remain. Ducts that cannot be routed around tree drip lines shall be tunneled through the drip line area as approved by the Contracting Officer's Representative.

29.6 Grounding

29.6.1 The secondary electrical distribution system shall be the solidly grounded neutral type with no intentionally introduced grounding impedance. Grounding shall be in accordance with Article 250, National Electrical Code. A green insulated grounding conductor shall be provided with all branch and feeder wiring.

29.6.2 The premises distribution system shall be grounded in accordance with TIA/EIA 607 and I3A.

29.6.3 A grounding counterpoise shall be provided around the transformer pad, chiller, and around the building. Counterpoises and ground ring shall be bonded together underground. Building counterpoises provided under lightning protection system requirements shall be connected to the transformer counterpoise, the main electrical panel, the main communications ground, building steel, and lightning protection down conductors. Ground rods shall be provided at each counterpoise connection. Connections shall be by exothermic weld. Building counterpoises shall be connected together where one building is located next to another building.

29.6.4 Resistance of driven grounding electrodes shall be tested at the time of installation by the fall-of-potential method. Resistance of the grounding systems shall be a maximum of 5 ohms. Chemical or other similar designs,

which calls for the user to maintain, will not be used. Documentation of test results will be provided to the Contracting Officer's Representative.

29.6.5 Grounding conductors shall be copper. Driven grounding electrodes shall be 3/4-inch diameter solid rods of the following materials: copper or copper-clad steel. Rods over 10 feet long may be sectional built-up type.

29.6.6 Grounding and bonding shall conform to UL 467.

29.6.7 Provide a #6 AWG grounding electrode conductor from the telephone terminal backboards and bond to the building grounding electrode system in accordance with the National Electric Code.

29.7 Exterior Lighting

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29.7.1 The design of exterior lighting and associated lighting levels not indicated shall be in accordance with Illuminating Engineering Society, IES, Lighting Handbook Reference and Application, 9th Edition. Exterior lighting shall include the new roads, parking lots, walkways, canopies, facility entrances/exits, and loading dock areas. All exterior lighting shall utilize ~~color corrected metal halide~~ high pressure sodium lamps to match base standard. Parking lots and street lighting shall be photocell controlled. All site lighting shall be zoned and shall have a separate photocell for control. Each contactor/zone shall be equipped with Hand-Off-Auto switches. Location of controls shall be coordinated with the User after contract award. Walkways shall be illuminated to 1 footcandle with aluminum or concrete bollards. Parking areas shall be illuminated to 1 footcandle and utilize high cutoff type fixtures mounted on 30 foot square aluminum poles. Where poles are located in areas capable of being struck by a vehicle, poles shall be mounted on concrete pedestals (height to be determined during the design of the project). Aluminum poles mounted in turf or landscaping areas shall be mounted on concrete pedestals 3 inches in height above the ground. Facility entrances/exits shall be illuminated with wall mounted fixtures or recessed fixtures mounted in the soffit, if applicable. All exterior fixtures shall be dark bronze anodized aluminum.

29.7.2 Metal poles shall be the pole manufacturer's standard design for supporting the number of fixtures indicated. Poles shall be designed for a wind velocity of 100 mph at the base of the pole, for a wind gust factor of 1.3, and for the height and drag factors recommended by AASHTO LTS-3. The effective projected area of luminaries and other pole-mounted devices shall be taken into account in pole design. Poles shall have grounding provisions. The type of pole shaft material provided shall not be mixed for the same type of fixture types. Grounding connection shall be provided near the bottom of each metal pole and at each concrete pole anchor base. Scratched, stained, chipped, or dented poles shall not be installed.

29.8 Lighting

29.8.1 Lighting shall be provided in all rooms in the building. Average maintained horizontal illumination levels at 30 inches above the finished floor shall be provided as listed in TI 800-01 Design Criteria. Vertical illumination levels for all rooms and horizontal and vertical illumination levels for rooms or areas that are not listed on the Schedules in TI-800-01 shall be in accordance with the Illuminating Engineering Society, IES, Lighting Handbook Reference and Application, 9th Edition. The IES handbook shall also be consulted for additional lighting requirements (uniformity, etc). Design should be based on the middle of the ranges; not the high values. Energy conservation methods shall be in accordance with ASHRAE 90.1. Interior lighting calculations for rectangular rooms shall be based on Zonal

Cavity method. Irregularly shaped rooms will utilize the point-by-point method for lighting calculations.

29.8.2 General ambient illumination shall provide a generally glare-free, high quality lighting environment. Linear-type fluorescent lighting installations in offices, conference room, workroom, file rooms and similar spaces shall achieve Visual Comfort Probabilities (VCP) of 70 or higher.

29.8.3 Occupancy sensors shall be used in storage rooms, janitor's closets, public restrooms, classrooms and offices. Private restrooms are to have light switches. Occupancy sensors may also be used in other areas for energy savings.

29.8.4 Fluorescent lamps shall be 32W, T8 or compact. The usage of U-lamps is not recommended due to higher initial cost. Fluorescent ballast shall be the electronic type, 0.9 power factor and 5% total harmonic distortion. All fluorescent lamps shall be low mercury content certified to pass the U.S. Environmental Protection Agency (EPA) Toxic Characteristics Leaching Procedures (TCLP) test for non-hazardous waste.

29.8.5 Wall switches shall be located on the strike side of a door, 6 inches from the door opening, unless otherwise functionally required. Multiple switching will be provided for rooms as directed by the user, where indicated on standard room guide plates, and in large rooms and areas. Multiple switching through the same light fixtures will be achieved by providing these fixtures with two ballasts. One switch/ballast combination will control the inner lamps, while the second switch/ballast combination will control the outer lamps.

29.8.6 Emergency Lighting

29.8.6.1 Illuminated exit signs and emergency lights shall be provided for all emergency exits and passageways as required by the NFPA Life Safety Code No. 101. All electrical, telecommunications and mechanical rooms shall also be provided with emergency lighting. Emergency battery ballasts in fluorescent fixtures will provide emergency lighting. Exit fixtures shall be LED (red) with built-in battery backup capability.

29.8.6.2 Upon loss of power the emergency lamp shall light regardless of the light switch position.

29.8.7 General offices and corridors will be illuminated using 2 foot by 4-foot static troffers with virgin acrylic lenses. Offices and all other areas with a large number of personal computer workstations will have low glare and low brightness fixtures such as indirect or fluorescent troffers with parabolic louvers. Conference rooms will be provided with a minimum of one dimmed fluorescent fixture. Small storage rooms, mechanical rooms, and electrical spaces will be provided with one foot by four foot fluorescent fixtures with wrap around virgin acrylic lenses. Compact fluorescent type down lighting fixtures and other types of lighting fixtures will be used in areas where special attention must be given to the aesthetics.

29.8.8 The Chapel Auditorium and Activities Room lighting fixtures will be controlled by a dimmer control cabinet with separate local controls. The Chapel Auditorium will be fitted with stage lighting to support the various worship needs. Lighting fixtures in the Chapel Auditorium and Activities Room will consist of accent, spot, wall sconces, concealed cove for ambient lighting and other specialty type lighting fixtures.

29.8.9 Interior lighting fixtures will be supported from the structure and will not be supported from suspended ceiling systems.

29.8.10 Security lighting shall be provided at service entrances and at utility rooms (i.e. mechanical, electrical, communications, etc.). Wall mounted security light fixtures shall be shrouded to minimize glare. Fixture shall use compact fluorescent lamps whenever possible; where compact fluorescent lamps are inadequate, fixtures shall be equipped with metal halide lamps.

29.8.11 Wall mounted light fixtures at main entrances and other high visibility areas shall be selected for aesthetics and compatibility with the building architecture.

29.8.12 Lighting shall be provided for specialty items such as display cases, accent lighting and other items as necessary.

29.9 Receptacles

29.9.1 Provide a minimum of one general-purpose 120 volt, 15 or 20 ampere duplex receptacle outlet in each room. In rooms where walls exceed 9 feet horizontally, provide an additional duplex outlet for each additional 9 feet of wall or fraction thereof. Receptacles spacing shall not exceed 9 feet. The general-purpose receptacles are in addition to the special purpose and dedicated outlets for special equipment. Unless otherwise indicated or required for the handicapped, all receptacles will be 18 inches above finish floor (AFF). Receptacles mounted above counter tops or in any control desk areas shall be appropriately mounted.

29.9.2 Receptacles in corridors shall be provided for floor cleaning equipment. The receptacles shall be spaced in such a manner as to permit full coverage by the equipment with a 25 foot extension cord. Floor receptacles shall not be used.

29.9.3 An overhead projector system will be used in the Conference Room. Provide the necessary conduits, wiring, outlets, etc. for the User to connect a laptop computer to operate with this projector. Location of these outlet will be coordinated with the User after contract award. Also coordinate location with overhead ceiling fan if provided.

29.9.4 Special Function Receptacles

29.9.4.1 Receptacle outlets in child activity spaces will be safety type, hospital grade, installed at a minimum of 54 inches AFF to the bottom of the outlet. Receptacle outlets shall not be placed adjacent to or within the crib area. Outlets mounted above counter tops for kitchenettes in the Infant Area can be placed above the backsplash, 18" from any open end of the counter, to ensure that they are not easily accessible to children.

29.9.4.2 Four isolated ground quadruplex receptacles, NEMA 5-20R on dedicated branch circuits will be provided in the Telecommunications Room to serve voice and data equipment needs. Duplex receptacles on dedicated branch circuits will be provided in Food Service Areas to serve two refrigerators, coffee maker, range with an oven, microwave, dishwasher, garbage disposal and other appliances as directed by User. The pantries in the Chapel will be fitted with receptacle outlets for refrigerators, hoods and ranges for kosher and Islamic cooking future needs.

29.9.4.3 Ground Fault Circuit Interrupter (GFCI)

GFCI type duplex receptacles in weatherproof enclosures will be provided on the exterior walls within close vicinity of an exterior door. GFCI protection, either by GFCI receptacle outlet or GFCI circuit breaker, will be

provided for all 120 volt AC receptacles installed in wet areas, including Kitchens, Janitor Closet, Child's Module kitchenettes with sinks, Toilets, and Staff Lounges kitchenettes. GFCI receptacles shall be wired such that loss of power on one receptacle does not affect downstream receptacles.

29.9.4.4 Provide a general purpose NEMA 5-20R duplex receptacle and NEMA 15-20R simplex receptacle outlets at each copier location. The user may adjust locations after the final review stage.

29.9.4.5 Each computer workstation shall be provided with an isolated ground quadraplex receptacle outlet adjacent to the combination voice/data outlet. All receptacles serving computer equipment shall be labeled and served from dedicated branch circuits with no more than four receptacles per outlet.

29.10 Premises Distribution System (PDS)

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29.10.1 A completely operational cabling system including, but not limited to, all necessary raceway, cabling, terminations, jacks, patch panels, and faceplates shall be provided in accordance with TIA/EIA 568-B. All combination outlets (voice/data) and cable TV (CATV) outlets will be 18 inches above finish floor (AFF) except wall voice outlets will be 54 inches AFF. One voice, two data, and one blank insert will be in the same outlet. The cable for the outlet will be 4 pair, 24 AWG solid unshielded twisted pair (category 6) copper for voice and a 4 pair, 24 AWG solid unshielded twisted pair (category 6) for data. Termination of copper at instrument end will be in a eight position connector (Category 6) for voice and eight position connector (category 6) for data. Termination at the Telecommunications Closet will be a 110 type blocks (category 6) for voice/data, 568B configured, mounted on telephone backboards. Provide telephone terminal backboards, 4'x8'x3/4" fire rated on three walls in each telecommunications room. An outdoor telephone outlet in a weatherproof enclosure shall be provided at a location as directed by the user. Provide a wall voice outlet in all telecommunications, Electrical and Mechanical Rooms. Connect all single 8-position type wall and pay telephone outlets from the telephone terminal backboard and/or wiring closet with one 4-pair, Category 6, unshielded twisted pair (UTP) solid copper station cable as defined by EIA/TIA-568-B. Refer to Army Chapel Standard Definitive Design, Appendix L, for locations and additional criteria.

29.10.1.1 DOIM will install the Main Distribution Frame, Building Distribution Frames, patch cords, fiber optics patch panels and the protected terminals for the building. Design Build Contractor to provide space for DIOM's equipment.

29.10.1.2 All combination voice and data jacks shall be installed in a 4-1/2" x 2-1/8" deep square box with a single gang plaster ring with 1" conduit stubbed out into the corridor cable tray system. The single gang plaster ring will allow a four-position single gang faceplate to be installed and the box will be sized to accommodate the slack cable.

29.10.1.3 The CATV system will consist of an empty conduit system with pull strings and 4 - 11/16 inches x 1-1/8 inches deep square outlet boxes. Time Warner, local CATV supplier, will provide a turn key installation, including electronics, coaxial cabling to the outlet, taps, splitters, connectors, etc. paid by this project. The program distribution source will be by the local CATV company supplying service to the Base. CATV outlets in each classroom and in each multi-purpose room were noted during the planning charette and should be verified with the installation prior to construction. Refer to Army Chapel Standard Definitive Design, Appendix L, for locations and criteria.

29.10.2 Backbone distribution will consist of multi-pair copper cable for voice and 12-strand multi-mode fiber optic cable for data. The fiber optic data cable will be terminated on fiber optic patch panels mounted in the equipment rack. The fiber optic cable will be terminated using ST connectors.

29.10.3 Conduit from voice/data or CATV outlets shall be a minimum of 1-inch electrical metallic tubing (EMT) conduit. One inch EMT conduits shall be installed as a "home run" between the equipment rack and each outlet or between each outlet and the cable tray. "Home run" means one continuous conduit run with NO pull boxes and NO more than two 90-degree bends in the entire conduit run. Solid bottom cable trays shall be used to provide a centralized cable distribution system in all the buildings if space permits and is readily accessible. Cable trays (if used) shall be no higher than 6 inches above finished ceilings. The cable tray shall be provided with one square-inch of cross-sectional area per outlet location to be served. An optimal fill ratio of 40% should be the design plan. A working space of 12 inches minimum above the cable tray shall be provided. The EMT conduit shall be physically strapped to the cable tray and an anti-chaffing grommet attached. All empty conduits routed to outlet boxes shall be provided with a pull cord. All conduits to administrative outlet boxes shall be provided with a pull cord for future installation of fiber optic cable (FOC).

29.10.4 Outlet Density. For planning purposes, when actual voice/data outlet locations are not known and cannot be determined with available information, reasonably accurate total voice/data outlet count estimations can be obtained based on the size and dedicated usage of the space. Calculations are based on gross square footage (overall building footprint without deducting for hallways, equipment rooms, restrooms, etc.), and the average outlet density for that specific category of facility space. The average voice/data outlet densities fall within the ranges given in TIA/EIA 569A.

	<u>Facility Space Category</u>	<u>Area (SF) per Outlet</u>
a.	Administrative Space	80
b.	Classroom Space	80

29.10.5 System Furniture Wiring. Modular furniture must be wired in accordance with TIA/EIA TSB 75 Multi-User Telecommunications Outlet Assembly (MUTOA)/Consolidation Point (CP).

29.10.6 Copper and Fiber Optic Cable Testing. The Contractor shall utilize the equipment manufacturer's standard commercial/quality assurance practices during system installation. The Contractor shall document all results. Contractor will test all copper and fiber optic cable IAW TIA/EIA standards and provide test results.

29.10.7 For additional criteria, see Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide.

29.10.8 Install firestop in all penetrations through fire-rated barriers.

29.11 Fire Alarm System

29.11.1 Each facility will be provided with a Class A Fire Alarm System with voice evacuation capabilities as required per Code. The fire alarm system will consist of a control panel, manual pull stations, horns and strobe lights, sprinkler water flow switches, valve tamper switches, air pressure supervisory switches, control and monitor modules for non-addressable devices and smoke and heat detectors. Fire alarm system for this building shall comply with the Americans with Disabilities Act (ADA).

29.11.2 In addition to the manual pull stations at all exits, provide pull stations at all other exterior entrances and in all electrical, mechanical, and communications rooms. In addition to the horns/strobes throughout the facility, provide them also in all electrical, mechanical and communications rooms.

29.11.3 Provide horns/strobes throughout the facility so that alarm sound levels at any location are at least 15 dB above normal ambient sound levels and can be heard in all rooms (i.e., in shower with water running). Provide strobe lights to comply with NFPA 72. Strobe lights shall meet Underwriter's Laboratories (UL) Standard 1971 and shall be synchronized.

29.11.4 The fire alarm system shall be a completely supervised system employing analog addressable initiating devices and multiplex communication techniques. Each detection, monitor and control device shall be individually addressable. Devices which are not inherently addressable (i.e. tamper, flow switches, etc.) shall be equipped with addressable monitor and control modules.

29.11.5 Coordinate with the other disciplines to provide tamper switches on all fire alarm system control valves and the Post Indicator Valve (PIV).

29.11.6 Conduit and wiring shall be installed in accordance with UFGS Section 13851A. System shall be a four-wire, looped conduit system. Vertical and horizontal separation of conduits shall be in accordance with NFPA 72. Conduits are to be marked with a red stripe every 10 feet. All junction or pullboxes shall be painted red.

29.11.7 Provide cabinet mounted MOV based surge protection device in addition to surge protection integral to the FACP. Device shall be UL 1449 listed and shall satisfy the requirements of IEEE C62.41.

29.11.8 Provide a Digital Alarm Communicator Transmitter to transmit signals over a dedicated phone line to the existing e9-1-1 monitors. Locate the Fire Alarm Control Panel (FACP) in the Electrical Rooms. Coordinate requirements with the Fire Chief.

29.11.9 Provide a smoke detector at the FACP location per NFPA 72, para. 1-5.6.

29.11.10 Refer to Appendix K, Army Chapel Standard Definitive Design for additional criteria.

29.12 Service Equipment

29.12.1 Provide only one main service disconnect device for the normal power supply to the facility and located in the Main Distribution Panel (MDP) inside the building.

29.12.2 The main service equipment and all other electrical equipment shall fit into the space required and be provided with all the access and clearance required by code.

29.12.3 A short-circuit and overcurrent protective device coordination study shall be provided for the complete electrical distribution system.

29.12.4 All interior cables will be copper. No aluminum conductors will be used in the construction of this facility. The use of 75 or 90 degrees C terminals and insulated conductors are required.

29.13 Electrical Disconnects

Electrical disconnects shall be installed adjacent to equipment and accessible to equipment operators for the following equipment: motors and equipment as required by NEC and OSHA requirements.

29.14 Lightning Protection

Lightning protection shall be provided for each facility. A complete protection via air terminals and ground counterpoise loop shall be provided. The system shall have the appropriate U.L. master label installed on the building. Down and roof conductors shall be concealed within the buildings. Lightning protection system shall be in accordance NFPA 780.

29.15 Transient Voltage Surge Protection (TVSP)

Surge suppressors shall parallel the operating devices in providing a path to ground for an electrical surge and limiting the magnitude of transient voltage surges on the system. Units shall be mounted adjacent to the Main Distribution Panel in accordance with the manufacturer's recommendation. Unit shall be hard-wired into the electrical distribution system utilizing a circuit breaker connection. Units shall be tested in accordance with IEEE C62.45 using an IEEE C62.41 Category B waveform. Units shall be UL 1449 listed and labeled. Modes of protection shall be normal mode (L-N, L-L) and common mode (L-G, N-G). The unit shall include self-diagnostic and self-testing capabilities, a resettable transient event counter, and a local audible alarm with mute capability.

29.16 Seismic Protection

Seismic design shall be in accordance with Army Technical Manual, TI 809-04, Seismic Design for Buildings, dated December 1998 and Specification Section 16070A Seismic Protection For Electrical Equipment.

29.17 Cathodic Protection.

29.17.1 The Contractor shall perform all pH tests, salinity tests, resistivity measures, etc., required to design the corrosion control and grounding systems.

Cathodic protection and protective coatings shall be provided for the following buried or submerged ferrous metallic structures regardless of soil or water resistivity in compliance with the National Association of Corrosions Engineers (NACE) criteria and standards.

- (1) Natural gas and propane piping.
- (2) Fire protection piping.
- (3) Ductile or cast iron pressurized piping under floor (slab on grade) in soil.
- (4) Underground heat distribution and chilled water piping in ferrous metallic conduit in soils with resistivity of 30,000 ohm-cm or less.

29.18 The electrical system shall comply with the Americans with Disabilities Act (ADA) for buildings identified in the RFP with this requirement.

29.19 The design and construction of the electrical system shall be in accordance with the most current codes and standards. Provide adequate electrical power and safe and efficient distribution from panelboards, switchboards to lighting, wiring devices, motors, miscellaneous equipment, kitchen equipment, appliances and the locations where it is needed, based on the project requirements as contained within this RFP (architectural, mechanical, etc).

29.19.1 The design of the electrical distribution system shall include twenty-five percent future load growth in all cable and equipment. Twenty-five percent spares shall be provided in all lighting and receptacle panelboards.

29.19.2 Panelboards serving the loads for the rest of the building shall not be located in corridors or any other open places that the public can access.

29.19.3 Series rated breakers/panelboards shall not be used.

29.20 Nonlinear Loads. The increasing presence of solid-state switching mode power supply components in electrical equipment requires the designer to consider the equipment to be supplied by the distribution system and to make provisions for nonlinear loads [in the building](#). These loads generate harmonics, which can overload conventionally-sized conductors or equipment causing safety hazards and premature failures. ETL 1110-3-403, IEEE Std. 1100 and IEEE Std. 519 shall be used as design guides.

29.20.1 ETL 1110-3-412 shall be used in the selection and application of transformers and dielectrics. K-rated transformers shall be supplied to serve nonlinear loads. "K" factor ratings shall be scheduled. Panelboards serving nonlinear loads shall have double-rated neutral buses. Motors connected to the same power source as nonlinear loads shall also be upgraded in size similarly. True RMS sensing meters, relays, and circuit breaker trip elements shall be used with nonlinear loads.

29.21 For additional electrical criteria, See TI-800-01 Design Criteria.

29.22 Audio/Visual System

29.22.1 Chapel

29.22.1.1 A high quality, low-level distributed loudspeaker system will be provided throughout the entire facility. The design shall facilitate a uniform distribution of sound and accommodate the diversity of worshipers and room configurations. The sound system shall provide for separate operation of the Worship Center and Activity Center. The remaining areas such as classrooms, administrative areas, etc. will be fitted with speakers and volume control. The sound system will be capable of overriding individual volume control. Uniformity of coverage shall be between the frequencies of 100 - 12,000 hertz, +4 db. Due to the flexibility of seating arrangements, a speaker selector switch will be required to turn off selected speakers and to minimize feedback concerns.

29.22.1.2 Wireless lavaliers and hand-held microphones will be provided as part of the system. Floor and wall mounted microphone outlets will be provided at expected platform locations and Baptismal Area. The amplifier rack will be located in the Audio Equipment Room. Sound controls are to be located in the rear of the Worship Center. Sound controls for the Activity Center will be located adjacent to the Worship Center controls. Controls should be wall mounted and concealed behind a door.

29.22.1.3 Provide the services of an Audio/Visual Consultant for the design of the sound system. Coordinate requirements with the user prior to design.

29.22.1.4 Provide two video screens and LCD ceiling mounted projectors in the Activity Center.

29.22.1.5 Refer to the Appendix K, Army Chapel Standard Definitive Design for additional criteria.

29.22.1.6 Provide conduit for future sound system control at the rear of the Worship Center.

29.22.2 Religious Education Facility

Speakers and volume control will be provided in the Infant and Toddler Areas. These speakers will be tied into the existing Chapel sound system.

29.22.3 Visual Paging System

The new Religious Education Facility and Chapel will be provided with a Visual Paging System. The system will consist of localized controls at the Infants, Toddler, Nursery and Crying Areas with an LED display located in the existing and new Chapel. The objective is to assign a number to each child and display the number during worship to summon the parent.

29.22 Seismic Protection.

29.22.1 Seismic protection (based on the seismic zone and geographical location of project) shall be provided for this project. Design requirements shall be in accordance with Army Technical Instructions TI 809-04, Seismic Design for Buildings, 31 Dec 1998. Detailed narrative and documentation shall be provided in Design Analysis to support the seismic protection design.

29.23 Location of Documents referenced in Section 29.

29.23.1 TI-800-01 & TI-800-04 - <http://www.hnd.usace.army.mil/techinfo/ti.htm>

29.23.2 Specifications Sections - <http://www.ccb.org/ufigs/ufigs.htm>

29.23.3 Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide - <http://arch-odisc4.army.mil/I3A/i3a.htm>

29.24 Unified Facility Guide Specifications (UFGS)

29.24.1 The project specifications shall be prepared using UFGS guide specifications. If additional specification sections are required, contact the Savannah District to see if a guide specification exists. If a guide specification does not exist, the Design/Build Contractor will prepare job specific specifications.

29.24.2 The guide specifications are to be edited and adapted by the designer to fit each individual project in accordance with the project requirements. The designer is to delete the inapplicable portions of the guide specifications and revise and/or supplement, as required, the applicable portions to provide a complete project specification. Deviations will not be allowed without prior approval from the Savannah District.

29.24.3 The following specifications sections shall be edited and submitted at the Final Review stage or earlier. Sections shall be submitted in hard copy form that indicates the changes being added and those to be deleted.

13080A Seismic Protection for Miscellaneous Equipment
13100A Lightning Protection
13851A Fire Detection/Alarm System, Addressable System
16070A Seismic Protection for Electrical Equipment
16370A Electrical Distribution System, Aerial
16375A Electrical Distribution System, Underground
16415A Electrical Work Interior
16710A Premises Distribution System
16770A Radio and Public Address System

30. SUSTAINABLE DESIGN

30.1 Sustainable Design Goal. The goal for this project is to achieve at least 25 points per building type using SPIRIT, the Army's project rating tool for sustainable design, for each building type. SPIRIT is a modified version of the US Green Building Council's LEED project rating tool.

30.2 Mandatory Requirements. The SPIRIT Points Summary Table, appended to this RFP, indicates what SPIRIT items are contract requirements for this project in the "Mandatory Points in RFP" column. A description of these SPIRIT items is contained in the SPIRIT document itself. This column also indicates the status of SPIRIT points that fall outside the scope of design and construction, such as features of the selected site.

30.3 Prohibited Solutions. The following will not be accepted as proposed features to earn SPIRIT points: None.

- End of Section -

SECTION 01012

DESIGN AFTER AWARD
(DESIGN/BUILD)
01/2002

1. GENERAL

The Contractor shall furnish and be responsible for a complete set of design documents as called for in Section 01010, GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS and as called for hereinafter.

1.1 Within 30 days after Notice to Proceed (NTP), the Contractor shall submit, for approval, a complete design schedule with all submittals and review times indicated in calendar dates. The Contractor shall update this schedule monthly. No design submittals will be reviewed or evaluated until after receipt and acceptance of the proposed design/review schedule. As a minimum, design submittals are required at the preliminary (60%), final (100%), and at the design complete (corrected final) stage. The requirements of each design stage are listed hereinafter. The Contractor shall reflect the number and schedules for the design submittals phases in the progress charts. As a maximum, the 60%, 100%, and design complete submittals shall be made in one consolidated package, which includes each of the major categories listed in paragraph "Contents of Design Submittals."

1.2 To facilitate fast-track design-construction activities the Contractor shall submit a 100% Site/Utility Design as the first design submittal. Following review, resolution, and incorporation of all Government comments, and submittal of a satisfactory set of site/utility design documents, the Contracting Officer shall issue a limited Notice to Proceed (NTP) which shall allow the Contractor to proceed with site development activities within the parameters set forth in the accepted design submittal. Submittal review, comment, and resolution times from this specification apply to this initial 100% Site/Utility Design Submittal. No onsite construction activities shall begin prior to receipt of a construction NTP by the Contractor.

1.3 The Contractor shall submit the design of the buildings at different stages of design to the Government for review. The drawings shall be grouped by building type, each set complete by itself. All submittals required at each stage of design shall be submitted as a complete package at one time. No partial submittals will be reviewed.

2. DESIGNER OF RECORD

The Contractor shall identify, for approval, the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. A listed, registered Designer of Record shall account for all areas of design disciplines. The Designer(s) of Record shall stamp, sign, and date all design drawings under their responsible discipline at each design submittal stage (see SCR - "Registration of Designers").

3. DEFINITION OF DESIGN SUBMITTALS

3.1 Corrected Proposal Submittal

The Contractor shall submit 10 copies of corrected drawings and technical proposal notebooks which incorporate any corrections on clarification items or deficiencies noted during negotiations for distribution to the Users and Government agencies. Submit the drawings in half size to the project manager within 30 days after contract award. This item only applies to the successful

proposer after contract award, and only if there were requests for clarification or deficiencies were noted.

3.2 Site/Utility Design Submittal (100%)

This submittal is provided to allow the Contractor to concentrate initial efforts for the site/utility portions of the project. By allowing this work to be separated, the Contractor is given the opportunity to fast track and begin construction on the site/utility work prior to completion of the building designs. More specific submittal requirements by stage and discipline are identified in the Savannah District Design Manual. This is available on the Internet (under "Engineering Criteria") at:

<http://en.sas.usace.army.mil>

This submittal shall consist of the following:

- a. Design analysis, developed to 100%, site work and utility work only.
- b. 100% complete site/utility drawings.
- c. Final site/utility specifications.
- d. Environmental permits, as required. When environmental permits are not required, the Contractor shall provide a statement with justification to that effect.

3.3 Preliminary Conformance Review Submittal (60%). This submittal is intended to insure that the Contractor's design is proceeding in accordance with the terms of the solicitation and the Contractor's original proposal as well as in a timely manner. This submittal shall consist of the following:

- a. Design analysis, developed to 60%.
- b. 60% complete drawings.
- c. Draft specifications.
- d. Site utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.4 Final Design Submittal (100%)

The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process as well as the original solicitation and the Contractor's proposal. The Contractor shall submit the following documents for Final Design Review:

3.4.1 60% review comments and responses annotated.

3.4.2 The Design Analysis submitted for Final Design Review shall be in its final form. The Design Analysis shall include all backup material previously submitted and revised as necessary. All design calculations shall be included. The Design Analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the final drawings and specifications.

3.4.3 The contract drawings submitted for Final Design Review shall include the drawings previously submitted which have been revised and completed as necessary. The Contractor is expected to have completed all of his coordination checks and have the drawings in a design complete condition. The

drawings shall be complete at this time including the incorporation of any design review comments generated by the previous design reviews. The drawings shall contain all the details necessary to assure a clear understanding of the work throughout construction. Shop drawings will not be considered as design drawings. All design shall be shown on design drawings prior to submittal of shop drawings. Each discipline has unique Final Design submittal requirements. Respective chapters of the Savannah District Design Manual should be reviewed to determine the exact nature of these requirements.

Example for HVAC Controls: HVAC Controls System Drawings (MC-Plates) shall be submitted at the final design stage and shall include the following.

- HVAC Controls System Legend
- Control System Schematic
- Equipment Schedule
- Valve Schedule
- Damper Schedule
- Sequence of Operations
- I/O Summary table and Data Terminal Strip Diagram
- Wiring Diagram
- Communications Network and Block Diagram
- Metering of Utilities (gas, electrical and water)
- DDC Panel locations

The control drawings shall use the Corps of Engineers standard control drawings. These drawings are available at the following website:
<http://www.sas.usace.army.mil/eng/hvac/> or on the SAS_STD CD available from the project manager.

3.4.4 The draft specifications on all items of work submitted for Final Design Review shall consist of legible marked up guide specification sections.

3.4.5 Site utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.5 Design Complete Submittal (Corrected Final)

After the Final Design Review, the Contractor shall revise the Contract Documents by incorporating any comments generated during the Final Design Review and shall prepare final hard copy Contract Specifications. The Contractor shall submit the following documents for the design complete submittal:

3.5.1 Design analysis, in final 100% complete form.

3.5.2 100% complete drawings.

3.5.3 Final specifications.

3.5.4 Final review comments and responses.

3.5.5 Electronic Submission.

All CADD files in native MicroStation format, as well as all prepared technical specifications shall be provided on CD-ROM. Two copies are required.

3.6 Structural Interior Design (SID).

3.6.1 Definition: The Structural Interior Design (SID) shall involve the selection and sampling of all applied finishes including material, color,

texture and patterns necessary to complete the building's interior architectural features. The SID shall also include all prewired workstation finishes and required drawings for prewired workstations. This information shall be submitted in 3-inch D-ring binders, 8-1/2 inch x 11-inch format.

3.6.2 Present architectural finish samples in an orderly arrangement according to like rooms/areas receiving like finishes. Each like room receiving like finishes will be noted as a Color Scheme. Each Color Scheme shall have a written description of material used. This written description shall use the same material abbreviations and notes that appear on the Room Finish Schedule and Legend in the contract drawings. Present prewired workstation finishes on a color board separate from the architectural finishes. Submit the SID binders concurrently with the architectural design submittals.

3.6.3 Preliminary Submittals: The Contractor shall submit three complete sets of the initial SID package. The design philosophy shall use a warm neutral background color with appropriate accent colors. All SID proposals shall be reviewed and approved by the Government. The Interior Designer shall revise the SID binders after each review and update the SID to satisfy review comments. Each submittal will follow this method of review until the Government approves the completed SID package.

3.6.4 Final Submittal: After approval of the Preliminary Submittal, the Contractor shall submit three complete sets of the approved and final Structural Interior Design packages. Once the Contractor has submitted the SID and the Government has approved the submittal, all materials, finishes, colors, textures and pattern submitted and approved for this project are then considered as part of the contract and the Contractor shall furnish all approved SID finishes. No deviations will be considered.

3.6.5 Format: Submit all SID information and samples on 8 1/2"x 11" modules with only one foldout. The maximum foldout width shall be approximately 25 inches. No foldouts on the top or bottom of the pages. Place the project title, base, architectural firm, page number and date on the bottom of each page or module.

3.6.5.1 The module shall support and anchor all samples. Anchor large or heavy samples with mechanical fasteners, velcro or double sided foam tape. Rubber cement or glue will not be acceptable.

3.6.5.2 Assemble the 8-1/2 inch x 11-inch pages and modules in a 3-inch D-ring binder. Holes for placement of the modules in the binder shall be 3/8 inch in diameter. Each binder shall be identified on the outside spine and front cover by title, project number, percentage phase and date.

3.6.5.3 Material and finish samples shall indicate true pattern, color and texture. Carpet samples shall be large enough to indicate a complete pattern or design.

3.6.5.4 Where paint manufacturers' color names and numbers are used indicate the finish of the paint such as gloss, semi-gloss, flat and so on.

3.6.5.5 Signage may include emblems, striping, letters, numbers and logos. The interior designer shall consider visual appearance, organization, location, structural supports (if required) and relation to other base graphics. Indicate on a separate signage sheet the location and message for all signage. Submit a sample of the signage material finish and color with the structural finishes.

3.6.5.6 No photographs or colored photocopies of materials will be accepted or approved.

3.6.6 The SID binder shall include the following information at each design submittal in this order:

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SEQUENCE OF SID SUBMITTAL

1. Title page
2. Table of contents
3. Design objectives - A statement of design objectives explaining the interior design philosophy of the facility shall be provided in the SID. Design objectives and the proposed method of accomplishing the objectives. Shall cover, when applicable, energy efficiency, safety, health, maintenance, image, personal performance of occupants and functional flexibility.
4. Interior floor plan
5. Interior sample finish boards (Color boards)

Scheme A
Scheme B
Scheme C

Example all restrooms could be noted as color scheme "A", all general open office finishes could be noted as color scheme "B" and the main lobby could be noted as color scheme "C".
6. Room finish schedule
7. Signage
8. Signage plan
9. Prewired workstation composite floor plans
10. Prewired workstation typicals - elevations and component inventory.
11. Prewired workstation panel identification plan with electrical outlet placement including base feed.
12. Integration and layout of ACSIM specific furniture. Plan must show suitability of proposed space to suit the furniture to be provided.

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4. GOVERNMENT APPROVED DESIGN SUBMITTALS

The approval of submittals by the Contracting Officer shall not be construed as a complete check, but will indicate only that the design is in conformance with the contract requirements. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor is responsible for the design and construction of all work.

5. MAILING OF SUBMITTALS

All submittals to the Government during design shall be mailed using overnight mailing service. Each copy of the submittals shall be mailed to the addresses listed below. Each submittal shall have a transmittal letter accompanying it that indicates the date, design percentage, type of submittal, list of items submitted, transmittal number and point of contact with telephone number.

Addresses and submittal distribution:

1. U.S. Army Engineer District, Savannah
ATTN: CESAS-PM-ME (Charles C. Bowden)
100 W. Oglethorpe Avenue
P.O. Box 889
Savannah, GA 31401-0889
2. U.S. Army Corps of Engineers,
ATTN: CESAS-CD-BE (John C. Bartholet)
West Georgia Area Office
Building 6, Room 412, Meloy Hall
Fort Benning, GA 31905-2409
3. HQ U.S. Army Infantry Center
Directorate of Facilities Engineering Logistics
Attn: ATZB-ELE-R (Dean Miller)
Building No. 6, Room 316, Burr Street
Fort Benning, Georgia 31905-5122
4. Director USAISEC-FDEO
ATTN: AMSEL-IE-DE-IN-CO (Mr. Gaffney)
1435 Porter Street, Suite 200
Fort Detrick, Maryland 21702-5047
5. Eastern Paralyzed Veterans Association
Architecture & Facilities Management
75-20 Astoria Boulevard
Queens, NY 11370-1178

The following table lists the number of copies of design submittal requirements for this project:

(1)	Corrected Proposal
COE	10 1/2 Size drawings
SAS	10 Revised Proposal Notebooks

	#	Item	#	Item	#	Item
		<u>60%</u>		<u>Final</u>		<u>Corrected Final</u>
(1)	8	Design Anal.	8	Design Anal.	3	Design Anal.
COE	8	Drawings	8	Drawings	3	Drawings
SAS	8	Spec.	8	Spec.	3	Spec.
			8	Ann. Comments	3	Ann. Comments
	2	Permit Appl.	2	Permit Docum.	2	CD's w/all electronic files
	1	SID	1	SID		
	1	CID	1	CID		
(2)	2	Design Anal.	2	Design Anal.	1	Design Anal.
CD-GO	2	Drawings	2	Drawings	5	Drawings
	2	Spec.	2	Spec.	5	Spec.
			2	Ann. Comments	5	Ann. Comments

	2	Permit Appl.	2	Permit Docum.	2	Drawings, full size
	1	SID	1	SID	2	CD's w/ all electronic files
	1	CID	1	CID		
(3)	5	Design Anal.	5	Design Anal.	2	Design Anal.
DPW	5	Drawings	5	Drawings	2	Drawings
	5	Spec.	5	Spec.	2	Spec.
			2	Ann. Comments	2	Ann. Comments
	2	Permit Appl.	2	Permit Docum.	2	Permit Docum.
	1	SID	1	SID	2	CD's w/all electronic files
	1	CID	1	CID		
(4)	1	Design Anal.	1	Design Anal.		
ISEC	2	Drawings	2	Drawings		
	2	Spec.	2	Spec.		
			2	Ann. Comments		
(5)	1	Design Anal.	1	Design Anal.		
EPVA	1	Drawings	1	Drawings		
	1	Spec.	1	Spec.		
			1	Ann. Comments		

6. GOVERNMENT REVIEWS

The Government will take 21 days to review and comment on each design submittal. For each design review submittal, the COR will furnish, to the Contractor, a single consolidated listing of all comments from the various design sections and from other concerned agencies involved in the review process. The review will be for conformance with the technical requirements of the solicitation and the Successful Offeror's (Contractor's) RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within 5 days after receipt of these comments in order that the comment can be resolved. The Contractor shall furnish disposition of all comments, in writing, with the next scheduled submittal. The Contractor is cautioned in that if he believes the action required by any comment exceeds the requirements of this contract, that he should take no action and notify the COR in writing immediately. Review conferences will be held for each design submittal at the Installation. The Contractor shall bring the appropriate design staff to the review conference. These conferences will take place the week after the receipt of the comments by the Contractor.

ProjNet/DrChecks is the required method for preparing and annotating comments. This is an Internet based database available on the Internet at:

<http://65.204.17.188/projnet/home/version1/>

User ID and password will be granted at the submittal stage.

6.1 If a design submittal is late by the approved schedule, the review will slip accordingly. The review process will not be shortened. Submittals date revisions must be made in writing at least 1 week prior to the effect submittal.

6.2 Post review conference action: Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. After receipt of final corrected design documents upon incorporation of backcheck comments the Project Manager will recommend

issuance of a Construction Notice to Proceed (NTP). The Government, however, reserves the right to disapprove design document submittals if comments are significant. If final or backcheck submittal(s) are incomplete or deficient, and require correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of \$5,000.00 per submittal.

7. COORDINATION

7.1 Written Records

The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish within 5 working days copies to the Contracting Officer and all parties involved. The written record shall include subject, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

7.2 Design Needs List

Throughout the life of his contract the Contractor shall furnish the COR a monthly "needs" list for design related items. This list shall itemize in an orderly fashion design data required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, name of the individual or agency responsible for satisfying the action item and remarks. The list will be maintained on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Copies of the list will be mailed to both the Administrative Contracting Officer and the agencies tasked with supplying the information. It is highly recommended that the Corps' RFI system be utilized during the design phase for this purpose. The system has report capability. User access and passwords will be furnished at the time needed with over the phone instructions.

8. DESIGN ANALYSIS

8.1 Media and Format

Present the design analysis on 8-1/2-inch by 11-inch paper except that larger sheets may be used when required for graphs or other special calculation forms. All sheets shall be in reproducible form. The material may be typewritten, hand lettered, handwritten, or a combination thereof, provided it is legible. Side margins shall be 1-inch minimum to permit side binding and head to head printing. Bottom margins shall be 1-1/4 inches, with page numbers centered 1 inch from the bottom.

8.2 Organization

Assign the several parts and sheets of the design analysis a sequential binding number and bind them under a cover indicating the name of the facility and project number, if applicable. The title page shall carry the designation of the submittal being made. The complete design analysis presented for final review with the final drawings and specifications shall carry the designation "FINAL DESIGN ANALYSIS" on the title page.

8.3 Design Calculations

Design calculations are a part of the design analysis. When they are voluminous, bind them separately from the narrative part of the design

analysis. Present the design calculations in a clean and legible form incorporating a title page and index for each volume. Furnish a table of contents, which shall be an index of the indices, when there is more than one volume. Identify the source of loading conditions, supplementary sketches, graphs, formulae, and references. Explain all assumptions and conclusions. Calculation sheets shall carry the names or initials of the author and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

8.4 Automatic Data Processing Systems (ADPS)

When ADPS are used to perform design calculations, the design analysis shall include descriptions of the computer programs used and copies of the ADPS input data and output summaries. When the computer output is large, it may be divided into volumes at logical division points. Precede each set of computer printouts by an index and by a description of the computation performed. If several sets of computations are submitted, they shall be accompanied by a general table of contents in addition to the individual indices. Preparation of the description which must accompany each set of ADPS printouts shall include the following:

- a. Explain the design method, including assumptions, theories, and formulae.
- b. Include applicable diagrams, adequately identified.
- c. State exactly the computation performed by the computer.
- d. Provide all necessary explanations of the computer printout format, symbols, and abbreviations.
- e. Use adequate and consistent notation.
- f. Provide sufficient information to permit manual checks of the results.

9. DRAWINGS

9.1 Prepare all drawings on Computer-Aided Design and Drafting (CADD) so that they are well-arranged and placed for ready reference and so that they present complete information. The Contractor shall prepare the drawings with the expectation that the Corps of Engineers, in the role of supervision, will be able to construct the facility without any additional assistance from the Contractor. Drawings shall be complete; unnecessary work such as duplicate views, notes and lettering, and repetition of details shall not be permitted. Do not show standard details not applicable to the project, and minimize unnecessary wasted space. Do not include details of standard products or items which are adequately covered by specifications on the drawings. Detail the drawings such that conformance with the RFP can be checked and to the extent that shop drawings can be checked. Do not use shop drawings as design drawings. The Contractor shall use standard Corps of Engineers title blocks and borders on all drawings. Submit an index of drawings with each submittal. The COR will furnish the Contractor file number, drawing name prefix, and specifics for inclusion in the title blocks of the drawings.

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9.2 The design drawing files shall be created using guidance provided herein. The CADD Details Library provided by the CADD/GIS Technology Center should be used as much as practicable. The A/E/C CADD Standard Release 2.0 and the Workspace is provided by the CADD/GIS Technology Center to set forth standards that will provide a consistent and compatible platform for CADD system use Corps-wide. The establishment of a uniform CADD platform will provide a means for rapid, accurate transfer and integration of virtually all project-related information throughout the life cycle of any building project or facility master plan. Savannah District, along with most other COE districts, has chosen to make Bentley MicroStation and related products, the CADD system of record. All translations from other systems to assure compatibility must be the task of the A-E firm and not of Savannah District personnel.

9.3 Only standard fonts provided by MicroStation are allowed to be used in the creation of CADD files. No fonts created by third parties or the designer are permitted.

9.4 The uses of reference files and model files during the design stage is up to the discretion of the designers. All CADD files at Design Complete submittal shall be in separate folders by discipline or building, free standing, independent files by folder. All reference files shall be in the same folder as the design files. Example of folders, Civil, Building 1, Building 2, etc.

9.5 Submit all Design Complete CADD files on read/write CD-ROM disk.

10. SPECIFICATIONS

10.1 The Contractor shall submit marked-up and final specifications as required. The project specifications shall be prepared using UFGS guide specifications. If there is more than one UFGS guide specification for the same thing, use the one with an "A" suffix. If a UFGS guide specification cannot be found, contact the Savannah District to see if a guide specification exists. If a guide specification does not exist the Design/Build Contractor will prepare a job-specific specification. The UFGS shall be edited and adapted by the designer for this project, incorporating UFGS instructions and recommendations in the notes to specifier contained in the guide specs. The designer is to delete inapplicable portions of the guide specification and revise and/or supplement, as required, the applicable portions to provide a complete project specification. Specifications shall be submitted at final design submittal in hard copy form that shows the text added and deleted with additions highlighted and deletions lined through but still readable. This feature is available in SpecsIntact. If the design is based on a specific product, the specification shall consist of the important features of the product. The specification shall be detailed enough such that another product meeting the specification could be substituted and it would not adversely impact the project. After incorporation of comments, submit a final, design complete specification package. Delete all marked out or redlined text and type in all inserted text. Unified Federal Guide Specifications (UFGS) and Savannah District Guide Specifications are available on the Internet at:

<http://www.hnd.usace.army.mil> and <http://en.sas.usace.army.mil/>

Specsintact software is available free of charge at:

<http://si.ksc.nasa.gov/specsintact>

These specifications shall be edited and tailored by the Contractor to meet the requirements of the project under design.

10.2 Submittal Register

Develop the construction submittal requirements during the design phase of the contract. List the submittal requirements in paragraph SUBMITTALS of each specification section. The SPECSINTACT program generates a submittal register from these paragraphs. Include this register at the end of Section 01330 SUBMITTAL PROCEDURES (DESIGN BUILD). The Contractor shall be responsible for listing all required submittals necessary to insure the project requirements are complied with. The submittals paragraph shall identify submittal items such as shop drawings, manufacturer's literature, certificates of compliance, material samples, guarantees, test results, etc. that the Contractor shall

submit for review and/or approval action during the life of the construction contract.

11. CONTENTS OF DESIGN SUBMITTALS

11.1 The 100% site/utility design submittal shall contain as a minimum, the following:

11.1.1 General Narratives

11.1.1.1 Site/Layout

Explanation of objectives and factors influencing siting decisions. General overview of major site features planned, such as building orientation, drainage patterns, parking provisions, traffic circulation, provisions for the handicapped, security requirements, etc. Rationale for locating major site elements. Set back requirements or specific clearance requirements. Locations of borrow and spoil areas.

11.1.1.2 Utility Systems

Design narrative for the natural gas, water supply, storm drainage, and wastewater systems relating to this project. Include an analysis of the existing distribution systems capability to supply sufficient quantity at adequate levels. If the existing distribution systems are inadequate, provide the design solution to augment the systems to provide the requirements for the new facilities.

11.2 All drawings included in the required technical data for the proposal submission (see Contract Clause, TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS) shall be developed to 100 percent completion. In addition to the individual utility plans, submit a combined utility plan drawn to the same scale as the individual utility plans.

11.2.1 General Site Layout

Scale shall be included.

11.2.2 Site Grading and Drainage Plans

Show locations of all sediment basins, diversion ditches, and other erosion control structures. Indicate the approximate drainage areas each will service. Indicate the materials, construction and capacity of each structure. Include limits of landscaping and seeded areas. General site grading and drainage shall be indicated by contour lines with an interval of not more than approximately 1 foot [800mm].

11.2.3 Road Alignment Plans

Scale shall be no greater than 1"=30' and profiles showing pavement and shoulder widths, azimuths and curve data, limits of grading, and erosion control. The materials to be used shall be indicated.

11.2.4 Traffic Control Plan

Traffic routing and signage shall be in accordance with The Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highways Administration.

11.2.5 Parking Lots

Show the actual dimensions of parking lots and measurements from a known reference point rather than coordinates at corners. Show the number of parking spaces.

11.2.5 Sanitary Sewer Plan

Scale shall be 1"=30' and profiles showing location and elevation of pipe, thrust blocks, manholes, etc. Materials and construction of main and appurtenances shall be indicated. Specifications shall be provided.

11.2.6 Water Supply Line Plans

Scale shall be 1"=30' and profiles showing locations of valves, thrust blocks, connections, etc. Materials shall be indicated and specifications shall be provided for valves, pipes, etc.

11.2.7 Electrical Plan Requirements

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11.1.7.1 Required diagrams and details on Site Electrical Drawings shall be provided by Flint EMC for their work. The Contractor shall provide As-Built Site Electrical Drawings for his site electrical work.

~~a. Off Site Electrical Distribution Plan:~~
~~b. Off Site Primary Circuit Routing Plans:~~
~~c. Off Site One Line Diagram. (If applicable)~~
~~d. Off Site Details. (Aerial Pole Line Construction, etc.) (If applicable).~~
~~e. On Site Electrical Distribution Plan:~~
~~f. On Site One Line Diagram.~~
~~g. On Site Distribution Transformer Schedule: Provide with the following headings:~~
~~Transformer Designation.~~
~~Transformer Size (KVA).~~
~~Building(s) Served.~~
~~Primary Phase(s) and Circuit to which connected.~~
~~h. On Site Details (Site Lighting, Trenching, Pad Mounted Transformer, etc.).~~

11.1.8 Specifications

Provide final specifications which include all sections which apply to site/utility work.

11.1.9 Design Analysis

Design analysis shall include design calculations fully developed to support the design of the site and utility systems included in this submittal.

11.1.10 Geotechnical

Soils analysis and geotechnical report will be furnished by the Government with the RFP. Any additional data necessary for the design will be obtained by the Contractor. Geotechnical information must be provided to support all assumptions and design parameters utilized in the presented site/utility design as applicable.

11.2 The final design submittal shall contain as a minimum, the following:

11.2.2 Landscape, Planting and Turfing

11.2.2.1 The landscape planting design narrative shall describe the analysis of existing site conditions, including an indication of existing plant materials that are to remain on the site. The statement of concept shall indicate specific site problems related to proposed development and the rationale for proposed plant locations. The narrative shall also include a list of suggested types and sizes of plant materials which are to be used, based upon the designated functional and visual criteria.

11.2.2.2 The drawings shall be prepared at a scale which corresponds with the site layout and grading plans and, likewise, shall include reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas, as needed, to clarify requirements. The proposed layout shall indicate shade trees, evergreen trees, flowering trees, shrub masses, etc., according to designated functional and visual locations of planting. A legend which also indicates sizes of plants recommended for each of the above categories shall be included. The drawings and all subsequent plans shall indicate existing and proposed buildings, paved areas, signs, light standards, transformers, dumpster areas, storm drainage system, and other structures and utilities.

11.2.2.3 Landscape, Planting and Turfing

Final design drawing(s) shall include a complete schedule of plant materials which indicates their botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Scale of drawing shall be prepared at 1" = 30'. Drawing shall correspond with the site layout and grading plans and reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas as needed, to clarify requirements. Final design drawings, indicating proposed plants by a (+) mark for the plant location and a circle which is scaled at approximately 2/3 the ultimate growth spread (diameter) of plants, shall also include a complete schedule of plant materials which indicates botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Final drawings shall also include the basic details for installation of tree, shrub, and ground cover planting, as well as any other applicable details for clarification of specific project requirements.

11.2.3 Architectural

11.2.3.1 Design narrative shall provide a summary of functional space relationships, as well as circulation. There shall also be a general statement for the rationale behind the major design decisions.

11.2.3.2 Architectural Floor Plans shall indicate dimensions, columns lines, and detail references. Toilets and other specialized areas shall be drawn to 1/4" scale and shall show any needed interior features.

11.2.3.3 Finish schedule shall indicate material, finishes, colors and any special interior design features such as soffits, fascias, and lighting troughs, etc.

11.2.3.4 All required equipment shall be shown on the drawings with an equipment list.

11.2.3.5 List any special graphics requirements that will be provided.

11.2.3.6 Schedules shall be provided for both doors and windows. These schedules shall indicate sizes, types, and details for all items shown on floor plans.

11.2.3.7 Hardware sets using BHMA designations.

11.2.3.8 Composite floor plan showing all prewired workstations. Also show typical elevations of each type of workstation.

11.2.3.9 SID package.

11.2.3.10 Fire Protection and Life Safety Analysis. This analysis must be performed by a Registered Fire Protection Engineer (FPE). NICET certification is not sufficient to address this requirement.

11.2.4 Structural Systems

11.2.4.1 State the live loads to be used for design. Include roof and floor loads; wind loads, lateral earth pressure loads, seismic loads, etc., as applicable.

11.2.4.2 Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

11.2.4.3 Furnish calculations for all principal roof, floor, and foundation members.

11.2.4.4 This submittal shall include drawings showing roof and floor framing plans as applicable. Principal members will be shown on the plans. A foundation plan shall also be furnished showing main footings and grade beams where applicable. Where beam, column, and footing schedules are used, show schedules and fill in sufficient items to indicate method to be used. Show typical bar bending diagram if applicable. Typical sections shall be furnished for roof, floor, and foundation conditions. Structural drawings for proposals and submittals shall be separate from architectural drawings.

11.2.4.5 Provide any computer analyses used. The software shall be widely accepted, commercially available programs and complete documentation of the input and output of the program must be provided.

11.2.4.6 Provide complete seismic analyses for all building structural components. Seismic calculations shall clearly demonstrate compliance with all requirements set forth in the Statement of Work.

11.2.5 Plumbing Systems

11.2.5.1 List all references used in the design including Government design documents and industry standards.

11.2.5.2 Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

11.2.5.3 Prepare detail calculations for systems such as sizing of domestic hot water heater and piping; natural gas piping; [lp gas piping and tanks] [fuel oil piping and tanks].

11.2.5.4. Indicate locations and general arrangement of plumbing fixtures and major equipment.

11.2.5.5 Include plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Piping layouts and risers should also include natural gas (and meter as required), [LP gas], [fuel oil] and other specialty systems as applicable.

11.2.5.6 Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required.

11.2.6 Fire Protection/Suppression

11.2.6.1 List all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.

11.2.6.2 Classify each building in accordance with fire zone, building floor areas and height and number of stories. This information shall be contained in the fire protection analysis.

11.2.6.3 Discuss and provide description of required fire protection requirements including extinguishing equipment, detection equipment, alarm equipment and water supply. Alarm and detection equipment shall interface to requirements of electronic systems. This information shall be contained in the fire protection design analysis.

11.2.6.4 Prepare a plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Provide the following types of information:

The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways, etc.

The location and coverage of any fire detection systems.

The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.).

The location of any other major fire protection equipment.

Indicate any hazardous areas and their classification.

11.2.6.5 Prepare a schedule describing the internal systems with the following information: fire hazard and occupancy classifications, building construction type, GPM/square foot sprinkler density, area of operation and other as required.

11.2.6.6 Hydraulic calculations based on water flow test shall be prepared for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. Include copies of Contractor water flow testing done to certify the available water source.

11.2.7 Electronic Systems

Electronic Systems responsibilities include the following:

Fire Detection and Alarm System
Fire Suppression System Control
Public Address System
Telephone System

Cable Television System
Special Grounding Systems
Cathodic Protection
Intrusion Detection, Card Access System
Central Control and Monitoring System

11.2.8.1 The design analysis shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes and cost analyses of all systems considered.

11.2.8.2 Design of the fire alarm and detection system shall include layout drawings for all devices and a riser diagram showing the control panel, annunciator panel, all zones, radio transmitter and interfaces to other systems (HVAC, sprinkler, etc.).

11.2.8.3 Specify all components of the fire suppression (FS) system in the FS section of the specifications. Provide a clear description of how the system will operate and interact with other systems such as the fire alarm system. Include a riser diagram on the drawings showing principal components and interconnections with other systems. Include FS system components on drawing legend. All components shown of floor plans shall be designated as FS system components (as opposed to Fire Alarm components). Show the location of FS control panels, HVAC control devices, sensors, and 120V power panel connections on the floor plans. Indicate zoning of areas by numbers (1, 2, 3) and detectors subzoned for cross zoning by letter designations (A and B). Differentiate between ceiling mounted and underfloor detectors with distinct symbols and indicate subzone of each.

11.2.8.4 Show location of telephone outlets (including pay phones) on the plans. Include legend and symbol definition to indicate height above finished floor. Show Telephone Conduit System Riser Diagram. Size conduit on Riser Diagram. Do not show conduit runs between backboard and outlets on the floor plans. Underground telephone distribution conduit shall be shown on either the electrical or electronic site plan.

11.2.8.5 Grounding System

The specifications and drawings shall completely reflect all of the design requirements. The specifications shall require field tests (in the construction phase), witnessed by the Contracting Officer, to determine the effectiveness of the grounding system. The design shall include drawings showing existing construction. Verification of the validity of any existing drawings and/or any other data furnished by the Government shall be the responsibility of the engineering services firm.

11.2.8.6 Provide a statement describing the extent of any exterior work such as telephone lines, cable television (TV) distribution cables, duct banks, etc., outside of 5 feet from the building line.

11.2.8.7 Provide the name of the licensed corrosion engineer or NACE specialist. Provide the following for cathodic protection systems:

Clearly define areas of structures or components in soil or water to be protected.

Type system recommended, comparison of systems, cost estimates showing all equipment alternatives.

Calculations on all systems that are considered showing all information and descriptions.

11.2.8.7.1 Design of Cathodic Protection

The design shall clearly provide a thorough and comprehensive specification and drawing. The design plans and specifications shall show extent of the facilities to be protected, location and type of anodes, location of test points, details for sectionalizing an underground piping system. This design shall be complete enough to purchase equipment and build without design changes to meet criteria of protection.

11.2.8.8 Exterior work to be shown on electrical site plan.

Existing and new communications service lines, both overhead and underground, shall be properly identified.

Show removals and relocations, if any.

11.2.8.9 Provide a descriptive narrative of all electronic systems that are required for project. Define any hazardous areas (as defined in the National Electric Code) and indicate the type of equipment proposed for use in such areas. Show the location of all electronic system panels, etc., on the floor plans. Show the proposed riser diagrams for all systems. Show sizes of all conduit, wires, cables, panels, etc. Provide a complete symbol legend for all devices or equipment shown on the plans. For work requiring removals or demolition, the designer shall show by use of drawings or narrative, how demolition work is to be done.

11.2.9 Electrical and Mechanical Systems

Provide all information as required on the 100% design submittal developed to 50% completion.

11.2.10 Specifications

Draft of specifications for housing units, including index and trade sections.

11.3 The 100% design submittal shall contain, as a minimum, the following items for all submittals:

11.3.1 General

A complete set of construction documents, plans and specifications at the same level of detail as if the project were to be bid including a complete list of equipment, fixtures and materials to be used. The final drawings are an extension of the reviewed 60% drawings and are to include the 60% comments and responses. All details shall be shown on the drawings.

11.3.2 The design analysis is an extension of the reviewed 60% design analysis and supports and verifies that the design complies with the requirements of the project.

11.3.3 Submit marked up specifications. The specifications shall be coordinated with the drawings and shall describe in detail all items shown on the drawings.

11.3.4 Architectural

11.3.4.1 All architectural drawings shall be coordinated with the other engineering disciplines. Ensure that the plans are in compliance with the applicable codes. It will be the Contractor's responsibility to implement the comments generated from any design review submittal as well as verify the consistency between plans and specification. The evaluation of the

Contractor's submittals shall be based on degree to which the submittal meet the requirements set forth in this document and the specifications.

11.3.4.2 Prewired Workstation Composite Floor Plans

Prewired workstation typicals - elevations and component inventory. Prewired workstation panel identification plan with electrical outlet placement including base feed.

11.3.4.3 SID package.

11.3.4.4 Fire Protection and Life Safety Analysis

This analysis must be performed by a Registered Fire Protection Engineer (FPE). NICET certification is not sufficient to address this requirement.

11.3.5 Structural Design

11.3.5.1 Furnish complete checked calculations for all structural members. Incorporate any changes required by comments on 50% Design Submittal.

11.3.5.2 Prior to this submittal, structural drawings shall be coordinated with all other design disciplines.

11.3.5.3 The final structural drawings shall contain the following information as a set of general notes:

- The allowable soil bearing value.
- The design stresses of structural materials used.
- The design live loads used in the design of various portions of the structures.
- The design wind speed.
- The seismic zone and the "K", "C", "I" and "Z" values used in design.

11.3.5.4 All structural drawings and calculations shall be checked and stamped by the designer of record (a registered Professional Engineer).

11.3.6 Fire Suppression System

Provide a file of the input data used in the computer program to design the fire suppression system as well as the output data.

11.3.7 Specific Mechanical and Plumbing Requirements

11.3.7.1 Required Plans, Diagrams, Schedules and Details on Unit Mechanical Drawings

11.3.7.1.1 Mechanical Floor Plan

The floor plans shall show all principle architectural features of the building which will affect the mechanical design. The floor plans shall also show the following:

- Room designations.
- Mechanical legend and applicable notes.
- Location of all ductwork or piping (double line ductwork required).
- Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards).
- Exhaust fan and range hood location.
- Size of all ductwork and piping.
- Thermostat location.

Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).
Location of all air handling equipment.
Return air paths (i.e., undercut doors, transfer grilles).
Flue piping size and location.
Piping diagram for forced hot water system (if used).
Fuel supply and return piping.

11.3.7.1.2. Equipment Schedule

Complete equipment schedules shall be provided. Schedule shall also include:

Capacity
Electrical characteristics
Efficiency (if applicable)
Manufacturer's name
Optional features to be provided
Physical size

11.3.7.1.3 Details: Construction details, sections, elevations, etc. shall be provided where required for clarification of methods and materials of design. Roof and exterior wall penetrations shall be detailed on the drawings.

11.3.7.2 Plumbing Floor Plan: The floor plan shall show all principal architectural features of the building which will affect the plumbing design. Separate plumbing plans will not be required if sufficient information can be shown on the mechanical plans to meet the requirements shown above. The floor plan shall also show the following:

Room designations.
Fixture Schedule.
Location of utility entrances.
Waste and water pipe location and size.
Fixture designations.

11.3.7.3 Design Analysis

Complete design calculations for mechanical systems. Include computations for sizing PM&E equipment, air duct design, and U-factors for ceilings, roofs and exterior walls and floors. Contractor shall employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation (e.g., TRNSYS, DOE 2.1 Blast, etc.) is required. These calculations can be used to size the mechanical systems. Based on the results of calculations, provide a complete list of the materials and equipment proposed for heating and plumbing, with the manufacturer's published cataloged product installation specifications and roughing-in data. The heating and cooling equipment data shall include the manufacturer's wiring diagrams, installation specifications, ARI certification, and the standard warranty for the equipment.

11.3.8 Specific Electrical Requirements

11.3.8.1 Required Plans, Diagrams, Schedules, and Details on Unit Electrical Drawings:

11.3.8.1.1 Electrical Floor Plan

The floor plans shall show all principle architectural features of the building which will affect the electrical design. The floor plan shall also show the following:

Room designations.

Electrical legend and applicable notes.
Lighting fixtures, properly identified.
Location of smoke and CO detectors.
Location of telephone and cable TV outlets.
Switches for control of lighting.
Receptacles.

Location and designation of panelboards. Plans should clearly indicate type of mounting required (flush or surface) and be reflected accordingly in specifications. Service entrance (conduit and main disconnect).

Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

11.3.8.1.2 Building Riser Diagram (from pad-mounted transformer to unit load center panelboard)

Indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

11.3.8.1.3 Load Center Panelboard Schedule(s)

Schedule shall indicate the following information:

Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting.
Branch Circuit Designations.
Load Designations.
Circuit Breaker Characteristics. (Number of Poles, Trip Rating, AIC Rating)
Branch Circuit Connected Loads (AMPS).
Special Features.

11.3.8.1.4 Lighting Fixture Schedule (Schedule shall indicate the following information:)

Fixture Designation.
General Fixture Description.
Number and Type of Lamp(s).
Type of Mounting.
Special Features.

11.3.8.1.5 Details

Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design.

11.3.8.2 Required Electrical Design Analysis

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Design analysis and calculations for the electrical systems shall be prepared by a licensed professional engineer ~~with experience in family housing, and shall be stamped as such~~. The design analysis shall be separately bound, in one or more volumes. Show functional and engineering criteria, design information, and calculations applicable to the project. The analysis shall be organized in a format appropriate for review, approval, and record purposes. The design calculations shall indicate methods and references identified, and shall explain assumptions and conclusions.

11.3.8.2.1 Voltage Drop (VD) Calculations

Select conductor sizes of primary feeders, site lighting circuits, service laterals, and unit feeder conductors. Calculate maximum length for each phase of each primary circuit, using a maximum allowable VD for each circuit. Calculate voltage drops for each conductor. Maximum allowable voltage drop for site lighting and service laterals is 3%. The combined voltage drop for the service laterals, unit feeders, and branch circuit cannot exceed 5%. Calculate the available fault current at the main breaker for the living unit panel. Provide a coordination study to support breaker selection.

11.3.9 Specifications

Provide final specifications. The Contractor shall make final identification of all materials and finishes at this stage.

11.4 Design Complete Submittal (Corrected Final)

11.4.1 Design Drawings

Drawings shall be 100% complete, signed and sealed by the designer of record. All previous review comments shall be incorporated.

11.4.2 Design Analysis

Complete design analysis for all design disciplines. The final Fire Protection and Life Safety Analysis shall be included in the Design Analysis.

11.4.3 Comment Response Package

Complete package showing all comments from all previous reviews and the respective response and disposition.

11.4.4 This submittal shall include all drawings and design information from the 100% site/utility submittal to form a complete design package.

12. DESIGN RELATED PRODUCTS

12.1 Architectural Renderings

Contractor shall provide the original and three copies of each ground level perspective artist's renderings of completed typical facilities with walks, parking, and landscaping. Renderings shall be no smaller than 14" x 18" or larger than 28" x 36", multi-colored, and shall be suitably titled, matted, and framed.

12.2 DD Form 1354

Three sets of DD Form 1354, Transfer and Acceptance of Military Real Property shall be prepared in accordance with DA Pamphlet 415-28 available at <http://www.usapa.army.mil/gils/> and submitted to the Contracting Officer. The DD Form 1354 will require input from both the design agent and the Contractor. The form must be completed in English units.

12.3 Submittal Register, ENG FORM 4288

The Contractor shall complete and submit three copies of a "preliminary" Eng Form 4288, Submittal Register to Contracting Officer. The "preliminary" Eng Form 4288, Submittal Register shall have the column "Submittal Identification", "Specification Paragraph Number", "Description of Submittal", "Type of Submittal", and "Remarks" completed; the Contractor shall identify whether the submittal is for "Government Approval" or for "Government Information" under the column "Remarks." The "final" Eng Form 4288, Submittal

Register, shall be in accordance with paragraph Submittal Register in this section.

12.4 Reproduction

Upon Government approval of 100% design documents, the original will be returned to the Contractor for reproduction purposes. The Contractor will be responsible for his own reproduction as well as reproduction for Government use. The Government will require twice the number of copies of the plans and specifications as were required for the review stages. No color boards will be required. The originals will be retained by the Contractor for recording of as-built conditions. Upon completion of the project, the original design documents corrected to reflect as-built conditions will be supplied to the Government.

13. PAYMENT DURING DESIGN

Payments, as authorized by the Authorized Representative of the Contracting Officer (COR), will be made monthly for the amount and value of the work and services performed by the Contractor. This estimate will be verified by the Contracting Officer utilizing the progress charts or the CONTRACTOR-PREPARED NETWORK ANALYSIS SYSTEM submitted by the Contractor and independent analyses of progress. See Contract Clause entitled PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS for additional information.

-- END OF SECTION --

SECTION 01312A

QUALITY CONTROL SYSTEM (QCS)

08/01

1.1 GENERAL

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data

1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01320A, PROJECT SCHEDULE, Section 01330, SUBMITTAL PROCEDURES, and Section 01451A, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.2 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on (3-1/2 inch) high-density diskettes or CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

1.3 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS:

Hardware

IBM-compatible PC with 200 MHz Pentium or higher processor

32+ MB RAM

4 GB hard drive disk space for sole use by the QCS system

3 1/2 inch high-density floppy drive

Compact disk (CD) Reader

Color monitor

Laser printer compatible with HP LaserJet III or better, with minimum 4 MB installed memory.

Connection to the Internet, minimum 28 BPS

Software

MS Windows 95 or newer version operating system (MS Windows NT 4.0 or newer is recommended)

Word Processing software compatible with MS Word 97 or newer

Internet browser

The Contractor's computer system shall be protected by virus protection software that is regularly upgraded with all issued manufacturer's updates throughout the life of the contract.

Electronic mail (E-mail) compatible with MS Outlook

1.4 RELATED INFORMATION

1.4.1 QCS User Guide

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.4.2 Contractor Quality Control(CQC) Training

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government shall be submitted by E-mail with file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a data diskette or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The QCS database typically shall include current data on the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

1.6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

1.6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.6.1.5 Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.7 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.2 Finances

1.6.2.1 Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.6.2.2 Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the payment requests with supporting data by E-mail with file attachment(s). If permitted by the Contracting Officer, a data diskette may be used instead of E-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01451A, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01451A, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government using E-mail or diskette within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the Government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.6.3.2 Deficiency Tracking.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.6.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.6.3.4 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 200.

1.6.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.6.4 Submittal Management

The Government will provide the initial submittal register, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts", or CONTRACTOR PREPARED NETWORK ANALYSIS SYSTEM (NAS) - PROJECT SCHEDULE, as applicable. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF). (See CONTRACTOR PREPARED NETWORK ANALYSIS SYSTEM (NAS) - PROJECT SCHEDULE.) The updated schedule data shall be included with each pay request submitted by the Contractor.

1.6.6 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

1.7 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function. If used, diskettes and CD-ROMs will be submitted in accordance with the following:

1.8.1 File Medium

The Contractor shall submit required data on 3-1/2 inch double-sided high-density diskettes formatted to hold 1.44 MB of data, capable of running under Microsoft Windows 95 or newer. Alternatively, CD-ROMs may be used. They shall conform to industry standards used in the United States. All data shall be provided in English.

1.8.2 Disk or CD-ROM Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.8.3 File Names

The Government will provide the file names to be used by the Contractor with the QCS software.

1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

-- End of Section --

NOTE: FOR ACO EDITING. Edited specification should be forwarded by e-mail to CD-Q/Davis at BCOE review phase.

SECTION 01322

CONTRACTOR PREPARED NETWORK ANALYSIS SYSTEM (NAS)
FOR DESIGN-BUILD CONTRACTS – PROJECT SCHEDULE
(Sept 01)

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of the specification to the extent referenced. The publication is referenced in the text by basic designation only.

ER 1-1-11 Progress, Schedules, and Network Analysis Systems (June 1995)

1.2 CONTRACTOR SCHEDULING REPRESENTATIVE

The Contractor shall designate, a scheduling representative, [full-time on the job site, no other duties] or [the individual tasked with the responsibility for preparation-updating-revision of the NAS schedule] who shall be responsible for the preparation and submittal of the entire NAS project schedule including all items specified below and revisions to the schedule or supplemental completion schedules, as applicable or directed by the Contracting Officer. The scheduling representative shall be approved by the Contracting Officer based on a resume, indicating as a minimum, formal training from software vendor or 5 years' experience in working with NAS schedules.

NOTE: The requirement for full time-on the job site may not be required for smaller contracts.

1.3 GENERAL REQUIREMENTS

Pursuant to Contract Clause FAR 52.236-15, SCHEDULES FOR CONSTRUCTION CONTRACTS, the Contractor shall prepare the NAS Project Schedule as described below. The NAS Project Schedule shall be a composite schedule including the design and construction activities. The scheduling of construction shall be the responsibility of the Contractor. Contractor management and superintendent personnel shall actively participate in its development. Subcontractors and suppliers working on the project should actively participate in developing and maintaining an accurate NAS Project Schedule, and the prime Contractor shall verify their support for the submitted schedule in writing. The Contractor shall include this written verification with the initial submittal and all revisions (to logic and durations) of the NAS schedule. The approved NAS Project Schedule shall be used by the Contractor to plan and control the progress of the work, perform evaluations of actual progress, perform time analysis for requests of time extensions on changes, and to provide the basis for the request of all progress payments.

The Government will use the NAS Project Schedule to evaluate the Contractor's progress for timely completion, plan for Quality Assurance verification of the work and evaluate the effects of a proposed modification on the contract duration (critical path activities).

1.4 BASIS FOR PAYMENT

The approved schedule shall be the basis for progress payments. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's progress, may delay progress payments and may result in an interim unsatisfactory performance rating for the area of effectiveness of management.

The Contractor shall provide all information/data, as specified below, for the Contracting Officer to evaluate Contractor progress for payment purposes. The Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, for failure to provide information and data required in this specification.

1.5 PROJECT SCHEDULE

1.5.1 Project Schedule Software

The Contractor shall prepare the NAS schedule using a computer software system. The system utilized by the Contractor shall be capable of satisfying all requirements of this specification and ER 1-1-11. Manual methods used to produce any required information shall require prior approval by the Contracting Officer. The Contracting Officer intends to use PRIMAVERA P3. The Contractor shall provide to the Government a complete input listing for the initial schedule.

The selected software must be able to function so as to provide all information and functions required by this specification in an accessible manner acceptable to the Contracting Officer. The Government's acceptance of the software does not waive any requirements under this specification and shall not require the Government to go to any significant effort to retrieve the required information.

Should the Contractor utilize software that is different than that utilized by the Contracting Officer, based on the software utilized by the Contractor for the preparation of the NAS schedule, the Contractor shall provide a copy of the software and a license to the Administrative Contracting Officer at the Government field office until final payment. The software and license shall be returned to the Contractor. The Contractor shall submit a copy of the user's manual outlining the selected CPM computer program's mathematical analysis capabilities, details, functions and operation.

The NAS schedule shall be prepared in the Standard Data Exchange Format as required in ER 1-1-11 and approved by the Contracting Officer.

1.5.2 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

1.5.2.1 Level of Detail Required

The Contractor shall develop or update the Project Schedule and provide data to the Contracting Officer at the appropriate level of detail necessary to properly evaluate progress as approved by the Contracting Officer.

1.5.2.2 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of all non-procurement activities' original durations should be greater than 20 work days).

1.5.2.3 Key Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the Project Schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of key procurement activities include, but are not limited to: shop drawing submittals/approvals or review and fabrication/delivery.

1.5.2.4 Government Activities

Government and other agency activities that could impact progress shall be included in the schedule. These activities include, but are not limited to: Government approvals, Government review and verification that design submittals are in accordance with the RFP, inspections, utility tie-in, Government-furnished equipment (GFE) and Notice to Proceed (NTP) for phasing requirements. Government approval of shop drawings activities should be shown with the duration of at least the minimum allowed by the contract. The Contractor's failure to provide reasonable durations in its schedule for Government activities does not establish or change the Government's review or approval periods, and the durations established for Government's activities are subject to approval by the Contracting Officer.

1.5.2.5 Contracts with Multiple Buildings/Facilities

The Contractor shall prepare a separate detailed NAS schedule for each building/facility indicating its critical path for specified interim completion dates or critical milestone date. The master NAS schedule shall indicate the interface/lag/link between buildings/facilities to maximize/level the labor and other resources. The master schedule critical path must be indicated through the various buildings/facilities and total duration equal to the contract duration.

1.5.3 Project NAS Schedule Submissions

The Contractor shall provide the submissions as described below. The data for each submission is as follows:

1.5.3.1 Preliminary NAS Project Schedule Submission

The Preliminary NAS Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval at the Preconstruction Conference. The approved preliminary schedule shall be used for payment purposes not to exceed 60 calendar days after NTP. The preliminary schedule shall be detailed for the first 60 days and depict the

remainder of the project in summary format. The preliminary schedule shall be submitted on data disk or CD (2 copies).

NOTE: The number of days of detail scheduling for the preliminary schedule must consider the size and complexity of the project and a reasonable time for the contract to prepare the schedule for the entire project and submit as the initial schedule. ACO must determine the proper calendar days to agree with 1.5.3.1.

1.5.3.2 Initial NAS Project Schedule Submission

The initial NAS Project Schedule shall be submitted for approval within 50 calendar days after NTP is acknowledged. The schedule shall include detailed activities for the entire project with a reasonable sequence of activities and shall be at a reasonable level of detail as approved by the Contracting Officer. The initial schedule shall be submitted on data disk or CD (2 copies).

NOTE: Number of hard copies of all diagrams/summary diagrams, reports/sorts, cash flow curves and narrative report as specified in paragraph 1.5.5 --- ACO option.

1.5.3.3 Monthly Updates (Entire NAS Project Schedule)

The Contractor shall submit monthly schedule updates to the Contracting Officer for approval. Monthly updates shall continue until the Contracting Officer accepts the contract. See paragraph 1.6.2 for further requirements for monthly updates. These submissions shall enable the Contracting Officer to assess Contractor's monthly progress. The monthly updates shall be submitted on data disk or CD (2 copies).

Number of hard copies of updates of all diagrams including summary diagram, reports/sorts, cash flow curves and narrative report as specified in paragraph 1.5.5 ---- ACO option.

The Contractor's invoice may be deemed as an improper invoice if it fails to provide monthly updates acceptable to Contracting Officer. This may delay progress payment and may result in an interim unsatisfactory performance rating. The Contractor shall include its requests to revise/adjust the NAS schedule for approval, prior to implementing the revisions into the official schedule.

1.5.3.4 Standard Activity Coding Dictionary

The Contractor shall use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory even if some fields are not used.

1.5.3.5 Submission Requirements

1.5.3.5.1 Data Disks

Two data disks containing the project schedule shall be provided. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A.

1.5.3.5.2 File Medium

Required data shall be submitted on CD including the baseline and all updates (cumulative). Monthly data disks must be 3.5 disks, formatted to hold 1.44 MB of data, under the MS-DOS Version S or 6.x, unless otherwise approved by the Contracting Officer.

1.5.3.5.3 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number of person responsible for the schedule, and the MS-DOS version used to format the disk.

1.5.3.5.4 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval. Provide the naming convention (limited to 4 characters: i.e. Filename (contract 99-47) = 47BL for Baseline and 4701 for 1st monthly.

1.5.4 Network Logic Diagram

1.5.4.1 [Number of hard copies of the network diagram shall be required on the preliminary schedule, initial schedule submission, and updated on each monthly schedule submissions. Monthly updates must indicate actual progress as of the data date. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished.]

1.5.4.2 Network diagrams shall show the order and interdependence of project activities and the sequence in which the work is to be accomplished, as planned by the Contractor. The network diagramming procedure which will be used will show how the start of a given activity is dependent on the completion of preceding activities, and how its completion restricts the start of following activities.

1.5.4.3 Activity Duration

The activity duration shall be indicated in "workdays" and revise the assigned calendar. The Contractor may request to change the work days from 5 days/week to 6 or 7 days/week should this action become necessary to regain the schedule due to problems unrelated to the Government actions.

1.5.4.3.1 Contractor submissions shall include reasonable activity durations as determined by the Contractor and subcontractors. The durations are to be determined by the Contractor using the planned crew

size/composition. All activities shall be resource loaded with the crew size and composition

NOTE: The previous sentence may be deleted on small contracts, as determined by the ACO. If resource loading requirement for each activity is not required, the manpower resource profile from PRIMAVERA will not be available.

1.5.4.4 The logic diagrams may be manually or machine drafted. The quality and readability of the diagrams shall be acceptable to the Contracting Officer.

1.5.4.5 Responsibility

The party responsible to perform the work shall identify all activities in the project schedule. Responsibility includes, but is not limited to, the subcontracting firm, Contractor work force, or Government agency performing a given task. Activities shall not belong to more than one responsible party. The Responsibility Code shall identify the responsible party for each activity. The Government must accept responsibility for activities in writing by the Contracting Officer.

1.5.4.6 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

1.5.4.8 Modification

Any activity that is added by a contract modification subnet shall be identified by the modification number. Activities shall not belong to more than one modification.

1.5.4.9 Bid Item

The Bid Item to which the activity belongs shall identify all activities in the project schedule. An activity shall not contain work in more than one bid item. The Bid Item Code shall identify the bid item for each appropriate activity.

1.5.4.10 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

1.5.4.11 Category of Work

All activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers to, but is not limited to, the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery,

installation, startup, and testing. The Category of Work Code shall identify the category of work for each activity.

1.5.4.12 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers to, but is not limited to, a work breakdown structure for the project. The Feature of Work Code shall identify the feature of work for each activity.

1.5.4.13 Scheduled Project Completion

The scheduled duration shall extend from NTP to the official contract completion date as awarded (unless approved by Contracting Officer for early completion).

NOTE: The ACO should prepare a contract modification (bilateral) should the Contractor propose a shorter duration than the duration included in the contract award. Should the Contractor refuse to sign the modification the contract and schedule duration must remain as awarded.

1.5.4.14 Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project." The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged and a zero day duration.

1.5.4.15 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity called "End Project." The "End Project" activity shall have an "LF" constraint date equal to the completion date for the project and a zero day duration.

1.5.4.16 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor's ability to actually complete prior to the contract period.

NOTR: The Contractor shall include an activity named "contingency" with no cost and a duration equal to the number of calendar days from the date all

the contract work is planned to be completed, to the official contract completion date as awarded.

The above paragraph may be added as determined by ACO.

1.5.4.17 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

1.5.4.18 Design phase

The Contractor shall include the following design phase activities in the composite design and construction NAS Project Schedule.

Design Charrette (Preliminary Design) within 7 days after NTP

Submittal of preliminary design (60%)

Design review conference of Preliminary design

Submittal of Final design (95%)

Design review conference of Final design

Submittal of Corrected Final design (100%)

Design review conference of Corrected Final design

Design Complete

The duration of each of these activities must be the duration as included in the contract award.

1.5.4.19 Start Phase for construction activities

The Contractor shall include as the first activity for a project phase an activity called "Start Phase ____" where ____ refers to the phase of work. The "Start Phase ____" activity shall have a "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration. The start phase for construction activities must be as applicable for design-build contracts

1.5.4.20 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase ____" where ____ refers to the phase of work. The "End Phase ____" activity shall have an "LF" constraint date equal to the completion date for the project and a zero day duration.

1.5.4.21 Inspection/Acceptance phase

The Contractor shall include the following work activities with duration and cost:

CQC (all) mechanical systems test (indicate the specific system)

CQC (all) electrical system tests (indicate the specific system)

Government QA (all) mechanical system acceptance/operational test (indicate specific system)

Government QA (all) electrical system acceptance /operational test (indicate specific system)

CQC completion inspection of the entire project

Contractor works off CQC punchlist

Prefinal inspection performed when the facility is completed such that it can be used for its intended function (as determined by the Contracting Officer)

Contractor works off prefinal punchlist

Final/acceptance inspection of the entire project

Contractor works off final punchlist.

Contractor shall allow 30-60 [ACO must determine the proper # of calendar days] calendar days total duration prior to current contract completion date for the above stated activities. (See specification section 01451 Contractor Quality Control.)

NOTE: Delete mechanical and electrical testing, as applicable---site work contracts--etc.

1.5.4.22 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. The Contractor must document the Actual Start and Finish dates on the Daily Contractor Quality Control report by activity. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features, which calculate one of these parameters from the other, shall be disabled.

1.5.4.23 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.

1.5.4.24 Negative Lags

Lag duration contained in the project schedule shall not have a negative value.

1.5.4.25 Project Monthly and Specific Milestone Dates

Milestone dates shall be shown on the diagram for start of project, each monthly milestone for the critical path activity in progress as of the data date, specific milestones such as: foundation complete, structure complete, roof complete, facility dried in, interim completion dates, and other specific contract milestones as required by the Contracting Officer.

1.5.4.26 Critical Path

The critical path shall be clearly shown on all diagrams (as approved).

1.5.4.27 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

1.5.4.28 S-Curves---cash flow curves

Earnings (cash flow) curves (as required for submissions) shall show scheduled ES/EF and LS/LF curves and actual progress plotted as of the data date. The cash flow curves are affected by the assigned cost and duration of the activities.

The LS/LF cash flow curve is expected approximate 40% earning (without stored material) @ 50% of the contract duration and 70% earning @ 70% of contract duration.

NOTE: FOR DESIGN-BUILD--DESIGN TO 100% THEN CONSTRUCT) The LS/LF cash flow curve is expected approximate 30% earning(without stored material @ 50% of contract duration and 70% earning @ 70% of contract duration.

NOTE: FOR FAST TRACK DESIGN-BUILD--The LS/LF cash flow curve is expected approximate 38% earning (without stored material) @ 50% of contract duration and 70% earning @ 70% of contract duration.

NOTE: Delete previous sentence, as applicable (intended for typical buildings only). See reasonable or sin2 curves in RMS.

1.5.5 Schedule Reports/Sorts (As Required By Contracting Officer For Submissions)

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

1.5.5.1 Activity Report/sort

A list of all activities sorted according to activity number.

1.5.5.2 Logic Report/sort

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.

1.5.5.3 Total Float Report/sort

A list of all incomplete activities sorted in ascending order of total float. Activities, which have the same amount of total float, shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

1.5.5.4 Earnings Report/Sort

A calculation of the Contractor's Total Earnings on the project from the NTP until the most recent Monthly Progress Meeting. This report shall reflect the earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

1.5.5.5 Milestone Report/Sort

The established monthly and special milestones shall be included in this report. The milestones must be established for each significant project features such as: clearing-grading-demolition, foundation, slab-on-grade, structure-frame, exterior walls-windows, roof-building dry-in, interior walls-mech/elect R/I, above ceiling mech/elect R/I, ceiling, interior wall finish--doors, painting-coverings, floor finish, installation of mech/elect and other equipment-fixtures-casework, plumbing, HVAC system, finish interior mech/elect, testing-commissioning mech/elect systems, onsite utilities, paving-landscaping, prefinal-final inspections-final cleanup and/or other features (as applicable for the project).

NOTE: For design-build contracts add milestones for each design submittal and design complete.

1.5.5.6 Late Start Sort

1.5.5.7 Bid Item Sort

1.5.6 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and

each monthly update of the project schedule. This report shall include: a description of activities along the most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis. If the Contractor believes that any Government action or inaction has, or potentially, will impact its progress, it will include the specific notice of the fact in this report. This information should include the activity number of the impacted work, nature and duration of the impact.

The narrative report shall address all modifications and weather activities that were input for the progress and their impact on the contract completion and total float.

1.5.6.1 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes. The Contractor shall not change the NAS schedule without specific written approval from the Contracting Officer. Unauthorized changes are not acceptable.

1.6 MONTHLY PROGRESS MEETINGS

There will be two progress meetings.

1.6.1 First - A progress update meeting will be held at the onsite between USACE and the authorized Contractor representatives, on the agreed cutoff date established at the preconstruction conference. During this meeting the Contractor shall indicate its requested percentage completed on each activity on which there was a revised cut of completion. The Contracting Officer must approve actual progress percentages for each activity. The updated progress data will be evaluated at the second progress meeting.

1.6.2 Second - A progress evaluation meeting shall be held with the Contractor, after the updating of the current progress period work activities percentage is complete including modifications and adverse weather activities, to evaluate progress and the NAS schedule.

The monthly updated NAS schedule is submitted to the Contracting Officer, for approval, with the Contractor's request for progress payment. The evaluation will include a review of actual durations compared to scheduled durations for critical and non-critical activities, progress on critical activities and near critical activities, trends, and current/potential problem areas, cash flow progress, and projected workflow of activities.

The Contractor's narrative report shall be available for review at least 3 days prior to the second progress meeting.

The Contracting Officer shall approve all proposed revisions and adjustments to the NAS schedule. Update information must include the Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date. The Contractor

must address all the activities on an activity-by-activity basis during the second progress meeting.

The monthly NAS schedule update must include an adverse weather activity for work activities impacted greater than 50% of the work shift or were impacted by previous adverse weather (carry-over). The adverse weather activities must be added and applied to the NAS schedule, (all work activities within 10 days float or less when compared to the current critical path and current critical activities) AFTER all of the modifications finalized within the month have been applied to the NAS schedule in the sequential order of finalization during the progress month.

The time extension for usually severe weather (in calendar days) must result from the agreement reached or (as directed) by the Contracting Officer) following the joint Contractor and Contracting Officer monthly weather evaluation held to review the CQC and QA daily reports, not later than 7 calendar days after the end of the progress month. The Contracting Officer will confirm monthly the results of this evaluation to the Contractor in writing.

The official contract completion date must be revised on the NAS schedule monthly (if applicable) based on the Contracting Officer's letter confirming the results of the monthly evaluation, to include the time extension in calendars of unusually severe weather (actual adverse weather impact less the specified anticipated adverse weather impact for the specific month).

A contract modification (SF 30) for a time extension to the official contract completion date, due to unusually severe weather (if any), will be completed quarterly by the Contracting Officer based on the monthly evaluations.

1.6.2.1 Remaining Durations

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations shall be based on Remaining Duration for each activity.

1.6.2.2 Logic Changes

All logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, Contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag duration, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

1.6.2.3 Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather, 2) delays encountered due to submittals (material delivery), Government activities, deliveries or work stoppages which make replanning the work necessary, 3) changes required to correct a schedule which does not represent the actual or planned prosecution and progress of the work.

1.6.3 Progress Meeting Attendance

The Contractor's Project Manager/Superintendent, Chief Quality Control, and Contractor's Scheduler, (as approved in paragraph 1.2), shall attend the

second monthly progress meeting. The onsite Government representatives shall be advised of the meeting location, time and date.

1.6.4 Update Submission Following Progress Meeting

A complete update of the entire NAS project progress schedule containing all approved revisions and adjustments, based on the second monthly progress meeting, shall be submitted not later than 6 working days after the second monthly progress meeting if applicable.

1.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests a time extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of delay based on a subnet/fragnet of work activities, revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is required for any time extension approvals. The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, shall not be a cause for a time extension to the contract completion date.

1.7.1 Submission Requirements for Justification of Request for Time Extension

The Contractor shall submit a comprehensive time analysis and justification for each "Request for Proposal" for a change in the contract, based upon the most recent approved schedule update at the time of the RFP issued. Such a time analysis and justification shall be in accordance with the requirements of other appropriate contract clauses and shall include, as a minimum:

- a. A subnet/fragnet of activities indicating all new change activities and the affect on existing schedule activities.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact the subnet/fragnet has when applied to the current-updated approved NAS schedule.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

1.8 MODIFICATIONS TO THE CONTRACT

1.8.1 Unpriced, unilateral and bilateral (without agreement on time) modifications

Upon receipt of the signed SF 30 for unpriced and unilateral modifications (or bilateral modifications with agreement on costs without an agreement on time) the Contractor shall submit proposed schedule revisions (in the form of a proposed subnet/fragnet) to the Contracting Officer for approval, within 14 days of the SF 30 being issued. The proposed (subnet/fragnet) revisions to

the schedule will be approved by the Contracting Officer prior to application of those changes within the project schedule. Should the Contractor fail or refuse to submit the provisions, the Contracting Officer may furnish the Contractor suggested (subnet/fragnet) revisions to the project schedule. Upon receipt, the Contractor shall include these subnet/fragnet revisions in the project schedule. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 14 days of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement on the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will be the basis for an "equitable adjustment" for performance of the work.

1.8.2 Bilateral modifications shall be entered into the NAS Schedule, utilizing the subnet/fragnet as agreed during negotiations, immediately after receipt of signed SF 30. Entries to the schedule must be approved by Contracting Officer.

1.8.3 All modifications subnets/fragnets shall be applied to the NAS Schedule immediately in the sequence in which they were finalized (received signed SF 30). Weather time extensions must be included upon receipt of the results of the monthly weather evaluation.

1.9 CONTRACTOR FALLS BEHIND THE APPROVED NAS PROJECT SCHEDULE

If the Contractor falls behind the approved schedule (behind the LS/LF cash flow curve or more than 15 work days of negative float) or performs the work in such a manner that the network diagram and mathematical analysis no longer indicate reasonable logic and duration for completion of the work by the current contract completion date, as determined by the Contracting Officer, the Contractor shall promptly provide a supplemental NAS recovery or completion schedule for completion by the current completion date, by reducing the remaining durations, revising logic, or adjusting resources onsite (in addition to the original approved NAS schedule) as approved by the Contracting Officer. The supplemental schedule shall be (resource loaded with crew size and productivity for each remaining activity, and indicating overtime, weekend work, double shifts needed to regain the schedule) in accordance with FAR 52.236-15, without additional cost to the Government. The supplement schedule shall not replace the original approved schedule as the official contract schedule. The original approved schedule shall be updated monthly (in addition to the supplemental schedule) and monitored by the Contractor and the Contracting Officer to determine the effect of the supplemental schedule progress has on the contract progress to regain its rate of progress for timely completion as specified.

The Contractor shall not artificially improve its progress by revising the schedule logic restraints or shortening future work activity durations. The Contractor may improve its progress by performing sequential work activities concurrently or by performing activities more quickly than planned, but such improvements shall be indicated on a supplement schedule and shall not be recorded on the official until the contractor has actually achieved them. The additional resources required to improve the progress must be evident on the work site.

Failure of the Contractor to perform work and maintain progress in accordance with the supplemental recovery or completion schedule may result in an interim and final unsatisfactory performance rating and/or may result in corrective action by the Contracting Officer in accordance with FAR 52.236-15.

1.10 OWNERSHIP OF FLOAT

All float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

PART 2 PRODUCTS (Not applicable)

PART 3 EXECUTION (Not applicable)

-- End of section --

SECTION 01330/S
SUBMITTAL PROCEDURES
(DESIGN/BUILD)
10/2000

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

SD-02 Shop Drawings

SD-03 Product Data

SD-04 Samples

SD-05 Design Data

SD-06 Test Reports

SD-07 Certificates

SD-08 Manufacturer's Instructions

SD-09 Manufacturer's Field Reports

SD-10 Operation and Maintenance Data

SD-11 Closeout Submittals

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.2.1 Designer of Record Approved.

Designer of Record approval is required for extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Contractor shall provide the Government the number of copies designated hereinafter of all Designer of Record approved submittals. The Government may review any or all Designer of Record approved submittals for conformance to the Solicitation and Accepted Proposal. The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

1.2.2 Government Approved Construction Submittals.

Administrative Contracting Officer approval is required for any deviations from the Solicitation or Accepted Proposal and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings".

1.2.3 Government Reviewed Extension of Design.

Government review is required for extension of design construction submittals, used to define contract conformity, and for deviation from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the Designer of Record design documents do not include enough detail to ascertain contract compliance. Government review is not required for extensions of design such as structural steel or reinforcement shop drawings.

1.2.4 Information Only.

All submittals not requiring Designer of Record or Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.2.5 GOVERNMENT REVIEWED OR "APPROVED" SUBMITTALS

The Contracting Officer's Representative conformance review or approval of submittals shall not be construed as a complete check, but will indicate only that the design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Government Review or approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor, under the Design and CQC requirements of this contract, is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been reviewed for conformance or approved, as applicable, by the Contracting Officer's Representative, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.3 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer's Representative, obtain the Designer of Record's approval, when applicable, and promptly furnish a corrected submittal in the form an number of copies specified for the initial submittal. Any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal shall be resubmitted as one requiring "approval" action, requiring both Design of Record and Government approval. If the Contractor considers any correction indicated by the Government on the submittals to constitute a change to the contract, it shall promptly provide a notice in accordance with the Contract Clause "Changes" to the Contracting Officer's Representative.

1.4 WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Designer of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

PART 2 PRODUCTS (Not used)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.1.1 Design Submittals

The Contractor shall provide design submittals in accordance with Section 01030 DESIGN/CONSTRUCTION SUBMITTAL REQUIREMENTS.01012 entitled "DESIGN AFTER AWARD".

3.2 SUBMITTAL REGISTER

The Contractor's Designer(s) of Record shall develop a complete list of submittals during design. The Designer of Record shall identify required submittals in the specifications. Use the list to prepare ENG Form 4288 Submittal Register or a computerized equivalent. The list may not be all inclusive and additional submittals may be required by other parts of the contract. The Contractor is required to complete ENG Form 4288 (including columns "a" through "r") and submit to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The submit dates and need dates used in the submittal register shall be coordinated with dates in the Contractor prepared progress schedule. Updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and

actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the submittal register shall also be revised and both submitted for approval. The Contractor shall maintain a submittal register for the project. project in accordance with Section 01312 RESIDENT MANAGEMENT SYSTEM (RMS).

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. An additional 10 calendar days shall be allowed and shown on the register for review and approval of submittals for food service equipment and refrigeration and HVAC control systems.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) included in Attachment 1 to Section 00800 shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the RMS-QC software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

3.5.1 Procedures

The Contractor shall be responsible for the scheduling and control of all submittals. The Contractor is responsible for confirming that the submittal register includes all submittals required by the contract documents.

In addition to those items listed on ENG Form 4288, the Contractor will furnish submittals for any deviation from the plans or specifications. The scheduled need dates must be recorded on the document for each item for control purposes and critical items must be tied to the Contractor's approved schedule where applicable.

The Contractor will submit to the Contracting Officer for approval a minimum of five copies of all G/RE (Resident/Area Office Review), G/ED (Engineering Division Review) or G/AE (Architect-Engineer Review) level submittals. Three copies of all FIO level submittals will be provided. The number of copies of submittals specified in this portion of the contract shall be complied with in lieu of four copies as specified by FAR 52.236-21.

For those contracts requiring Network Analysis System (NAS), the Contractor will schedule on the NAS critical items of equipment submittals and procurement activities that will, or have the potential to, significantly impact project completion. The inclusion or exclusion of critical items shall be subject to the approval of the Contracting Officer. Where ENG Form 4025 must be submitted prior to approval of the Construction Progress Schedule, the Contractor shall submit an initial annotated ENG Form 4288 upon which dates for submittal, approval and delivery of procurement items shall be included for the first 60 days of the work. Upon approval of the Construction Progress Schedule, or no later than 60 days after Notice to Proceed, the Contractor shall submit final annotated copies of ENG Form 4288. Dates shall be coordinated with the approved Construction Progress Schedule to logically interface with the sequence of construction. Critical item numbers will be shown on the listing if NAS is required.

Furnishing the schedule shall not be interpreted as relieving the Contractor of his obligation to comply with all the specification requirements for the items on the schedule. Contractor's Quality Control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective system. The Contractor shall furnish a list each 30 days of all submittals on which either Government's or Contractor's action is past due. He shall also furnish revised due dates in those cases when the original submittal schedule is no longer realistic. This monthly list of delayed items shall also be annotated by the Contractor to show what corrective action he is taking with regard to slippages in submittal schedule which are attributable to actions by him, his subcontractors, or suppliers.

The Contractor shall provide a complete updated submittal register indicating the current status of all submittals when requested by the Contracting Officer in order to assure himself the schedule is being maintained.

The Contractor shall certify that each submittal is correct and in strict conformance with the contract drawings and specifications. All submittals not subject to the approval of the Contracting Officer will be submitted for information purposes only.

No Corps of Engineers action will be required prior to incorporating these items into the work, but the submittal shall be furnished to the Area/Resident Engineer not less than 2 weeks prior to procurement of Contractor certified material, equipment, etc.

These Contractor approved submittals will be used to verify that material received and used in the job is the same as that described and approved and will be used as record copies. All samples of materials submitted as required by these specifications shall be properly identified and labeled for ready identification, and upon being certified by the Contractor and reviewed by the Contracting Officer, shall be stored at the site of the work for job site use until all work has been completed and accepted by the Contracting Officer. Delegation of this approval authority to Contractor Quality Control does not relieve the Contractor from the obligation to conform to any contract requirement and will not prevent the Contracting Officer from requiring removal and replacement of construction not in contract conformance; nor does it relieve the Contractor from the requirement to furnish "samples" for testing by the

Government Laboratory or check testing by the Government in those instances where the technical specifications so prescribe.

Contractor certified drawings will be subject to quality assurance review by the Government at any time during the duration of the contract. No adjustment for time or money will be allowed for corrections required as a result of noncompliance with plans and specifications.

Submittals Requiring Government Approval (G/ED Level, G/RE Level or G/AE level). Where the review authority is designated to the Government, the Contractor is required to sign the certification on ENG Form 4025 in the box beside the remarks block in Section I. The Government will code the items in block h and sign the approval action block in Section II as the approving authority.

Operating and Maintenance Instructions. Six complete sets of instructions containing the manufacturer's operating and maintenance instructions for each piece of equipment shall be furnished. Each set shall be permanently bound and shall have a hard cover. One complete set shall be furnished at the time test procedures are submitted. Remaining sets shall be furnished before the contract is completed. The following identification shall be inscribed on the covers: The words "OPERATING AND MAINTENANCE INSTRUCTIONS," name and location of the facility, name of the Contractor, and contract number. Fly sheets shall be placed before instructions covering each subject. Instruction sheets shall be approximately 8-1/2 by 11 inches, with large sheets of drawings folded in. Instructions shall include but are not limited to:

- (1) System layout showing piping, valves and controls;
- (2) Approved wiring and control diagrams;
- (3) A control sequence describing startup, operation and shutdown;
- (4) Operating and maintenance instructions for each piece of equipment, including lubrication instructions and troubleshooting guide; and
- (5) Manufacturer's bulletins, cuts and descriptive data; parts lists and recommended parts.

The Government will further discuss and detail the required submittal procedures at the Pre-Construction Conference.

3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. As stated above, the Contractor's Designer of Record approval is required for any proposed deviations. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT CONFORMANCE REVIEW AND APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four copies of the submittal will be retained by the Contracting Officer and one copy of the submittal will be returned to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be so identified and returned, as described above.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR	
Name)	(Firm
____ Approved	
____ Approved with corrections as noted on the submittal data and/or attached sheets.	
SIGNATURE: _____	
TITLE: <u>(DESIGNER OF RECORD)</u>	

SECTION 01355A

ENVIRONMENTAL PROTECTION
02/02

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. AIR FORCE (USAF)

AFI 32-1053 Pest Management Program

U.S. ARMY (DA)

AR 200-5 Pest Management

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328 Definitions

40 CFR 68 Chemical Accident Prevention Provisions

40 CFR 152 - 186 Pesticide Programs

40 CFR 260 Hazardous Waste Management System: General

40 CFR 261 Identification and Listing of Hazardous Waste

40 CFR 262 Standards Applicable to Generators of Hazardous Waste

40 CFR 279 Standards for the Management of Used Oil

40 CFR 302 Designation, Reportable Quantities, and Notification

40 CFR 355 Emergency Planning and Notification

49 CFR 171 - 178 Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

WETLAND MANUAL Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.5 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.6 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.7 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of

personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.8 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.9 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.10 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, RE

The environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
- d. Description of the Contractor's environmental protection personnel training program.
- e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan

shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations.

f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.

g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

i. Drawing showing the location of borrow areas.

j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1

k. This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and [the local Fire Department] [Facility Fire Department] [Facility Response Personnel] [Facility Environmental Office] in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic meters (yards) or tons along with the percent that was diverted.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

q. A pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation specific requirements. The Contractor shall follow AR 200-5 Pest Management, Chapter 2, Section III "Pest Management Records and Reports" for data required to be reported to the Installation

1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to

approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.11 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.

3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's

personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.2.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs) as indicated on the drawings. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. Any temporary measures shall be removed after the area has been stabilized.

3.2.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.3.1 Cofferdams, Diversions, and Dewatering Operations

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body. The Contractor shall comply with the State of Georgia water quality standards and anti-degradation provisions.

3.3.3 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands

3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of Georgia rules.

3.6 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.6.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

3.6.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 150 mm (6 inches) of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.6.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 and shall manage and store hazardous waste in accordance with the Installation hazardous waste management plan. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off Government property within 60 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer and the Facility Environmental Office. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.6.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in

accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.

3.6.5 Waste Water

Disposal of waste water shall be as specified below.

- a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water off-Government property in accordance with all Federal, State, Regional and Local laws and regulations.
- b. For discharge of ground water, the Contractor shall surface discharge in accordance with all Federal, State, and local laws and regulations
- c. Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing shall be discharged into the sanitary sewer with prior approval and/or notification to the Waste Water Treatment Plant's Operator.

3.7 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.8 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The Contractor shall submit a report to the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non-hazardous solid waste has been generated. The following shall be included in the report:

- a. Construction and Demolition (C&D) Debris Disposed = in cubic yards or tons, as appropriate.
- b. Construction and Demolition (C&D) Debris Recycled = in cubic yards or tons, as appropriate.
- c. Total C&D Debris Generated = in, cubic yards or tons, as appropriate.
- d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = in cubic yards or tons, as appropriate.

3.9 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

]If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.10 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.11 INTEGRATED PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, the Contractor, through the Contracting Officer, shall coordinate with the Installation Pest Management Coordinator (IPMC) at the earliest possible time prior to pesticide application. The Contractor shall discuss integrated pest management strategies with the IPMC and receive concurrence from the [IPMC] [PPC] through the COR prior to the application of any pesticide associated with these specifications. Installation Pest Management personnel shall be given the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. For termiticide requirements see Section 02364 TERMITICIDE TREATMENT MEASURES FOR SUBTERRANEAN TERMITE CONTROL. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.11.1 Pesticide Delivery and Storage

Pesticides shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Pesticides shall be stored according to manufacturer's instructions and under lock and key when unattended.

3.11.2 Qualifications

For the application of pesticides, the Contractor shall use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.11.3 Pesticide Handling Requirements

The Contractor shall formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and shall use the

clothing and personal protective equipment specified on the labeling for use during all phases of the application. Material Safety Data Sheets (MSDS) shall be available for all pesticide products.

3.11.4 Application

Pesticides shall be applied by a State Certified Pesticide Applicator in accordance with EPA label restrictions and recommendation. The Certified Applicator shall wear clothing and personal protective equipment as specified on the pesticide label. Water used for formulating shall only come from locations designated by the Contracting Officer. The Contractor shall not allow the equipment to overflow. Prior to application of pesticide, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

3.12 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.13 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.14 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer.

3.15 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.17 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise

instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS

02/02

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number. The designations "AOK" and "LOK" are for administrative purposes and should not be used when ordering publications.

ACI INTERNATIONAL (ACI)
P.O. Box 9094
Farmington Hills, MI 48333-9094
Ph: 248-848-3700
Fax: 248-848-3701
Internet: <http://www.aci-int.org>
AOK 5/01
LOK 2/01

AIR CONDITIONING AND REFRIGERATION INSTITUTE (ARI)
4301 North Fairfax Dr., Suite 425
ATTN: Pubs Dept.
Arlington, VA 22203
Ph: 703-524-8800
Fax: 703-528-3816
E-mail: ari@ari.org
Internet: <http://www.ari.org>
AOK 5/01
LOK 2/01

AIR CONDITIONING CONTRACTORS OF AMERICA (ACCA)
2800 Shirlington Road, Suite 300
Arlington, VA 22206
Ph: 703-575-4477
FAX: 703-575-4449
Internet: <http://www.acca.org>
AOK 5/01
LOK 6/00

AIR DIFFUSION COUNCIL (ADC)
104 So. Michigan Ave., No. 1500
Chicago, IL 60603
Ph: 312-201-0101
Fax: 312-201-0214
Internet: <http://www.flexibleduct.org>
AOK 5/01
LOK 6/00

AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)
30 W. University Dr.
Arlington Heights, IL 60004-1893
Ph: 847-394-0150
Fax: 847-253-0088
Internet: <http://www.amca.org>
AOK 5/01
LOK 2/01

ALUMINUM ASSOCIATION (AA)
900 19th Street N.W.
Washington, DC 20006
Ph: 202-862-5100
Fax: 202-862-5164
Internet: <http://www.aluminum.org>
AOK 5/01
LOK 2/01

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1827 Walden Ofc. Sq.
Suite 104
Schaumburg, IL 60173-4268
Ph: 847-303-5664
Fax: 847-303-5774
Internet: <http://www.aamanet.org>
AOK 5/01
LOK 2/01

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)
444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475 202-624-5800
Fax: 800-525-5562 202-624-5806
Internet: <http://www.transportation.org>
AOK 5/01
LOK 2/01

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)
P.O. Box 12215
Research Triangle Park, NC 27709-2215
Ph: 919-549-8141
Fax: 919-549-8933
Internet: <http://www.aatcc.org>

AOK 5/01
LOK 2/01

AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
2025 M Street, NW, Suite 800
Washington, DC 20036
Ph: 202-429-5155
Fax: 202-828-6042
Internet: <http://www.abma-dc.org>
AOK 5/01
LOK 2/01

AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA)
4001 North 9th Street, Suite 226
Arlington, VA 22203-1900
Ph: 703-522-7350
Fax: 703-522-2665
Internet: <http://www.abma.com>
AOK 5/01
LOK 2/01

AMERICAN CONCRETE PIPE ASSOCIATION (ACPA)
222 West Las Colinas Blvd., Suite 641
Irving, TX 75039-5423
Ph: 972-506-7216
Fax: 972-506-7682
Internet: <http://www.concrete-pipe.org>
e-mail: info@concrete-pipe.org
AOK 5/01
LOK 6/00

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
1330 Kemper Meadow Dr.
Suite 600
Cincinnati, OH 45240
Ph: 513-742-2020
Fax: 513-742-3355
Internet: <http://www.acgih.org>
E-mail: pubs@acgih.org
AOK 5/01
LOK 2/01

AMERICAN FOREST & PAPER ASSOCIATION (AF&PA)
American Wood Council
ATTN: Publications Dept.
1111 Nineteenth St. NW, Suite 800
Washington, DC 20036
Ph: 800-294-2372 or 202-463-2700
Fax: 202-463-2471
Internet: <http://www.forestprod.org/awc/>
AOK 5/01
LOK 6/00

AMERICAN GAS ASSOCIATION (AGA)
400 N. Capitol St. N.W. Suite 450
Washington, D.C. 20001
Ph: 202-824-7000

Fax: 202-824-7115
Internet: <http://www.aga.org>
AOK 5/01
LOK 2/01

AMERICAN GAS ASSOCIATION LABORATORIES (AGAL)
400 N. Capitol St. N.W. Suite 450
Washington, D.C. 20001
Ph: 202-824-7000
Fax: 202-824-7115
Internet: <http://www.aga.org>
AOK 10/00
LOK 0/00

AMERICAN GEAR MANUFACTURERS ASSOCIATION (AGMA)
1500 King St., Suite 201
Alexandria, VA 22314-2730
Ph: 703-684-0211
Fax: 703-684-0242
Internet: <http://www.agma.org>
AOK 5/01
LOK 3/01

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
One East Wacker Dr., Suite 3100
Chicago, IL 60601-2001
Ph: 312-670-2400
Publications: 800-644-2400
Fax: 312-670-5403
Internet: <http://www.aisc.org>
AOK 5/01
LOK 3/01

AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC)
7012 So. Revere Parkway, Suite 140
Englewood, CO 80112
Ph: 303-792-9559
Fax: 303-792-0669
Internet: <http://www.aitc-glulam.org>
AOK 5/01
LOK 3/01

AMERICAN IRON AND STEEL INSTITUTE (AISI)
1101 17th St., NW Suite 1300
Washington, DC 20036
Ph: 202-452-7100
Internet: <http://www.steel.org>
AOK 5/01
LOK 3/01

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
1819 L Street, NW, 6th Floor
Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
Internet: <http://www.ansi.org/>

Note --- Documents beginning with the letter "S" can be ordered from:

Acoustical Society of America
Standards and Publications Fulfillment Center
P. O. Box 1020
Sewickley, PA 15143-9998
Ph: 412-741-1979
Fax: 412-741-0609
Internet: <http://asa.aip.org>
General e-mail: asa@aip.org
Publications e-mail: asapubs@abdintl.com
AOK 5/01
LOK 6/00

AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)
1250 I St., NW, Suite 500
Washington, DC 20005-3922
Ph: 202-789-2900
FAX: 202-789-1893
Internet: <http://www.anla.org>
AOK 5/01
LOK 3/01

AMERICAN PETROLEUM INSTITUTE (API)
1220 L St., NW
Washington, DC 20005-4070
Ph: 202-682-8000
Fax: 202-682-8223
Internet: <http://www.api.org>
AOK 5/01
LOK 3/01

AMERICAN PUBLIC HEALTH ASSOCIATION (APHA)
800 I Street, NW
Washington, DC 20001
PH: 202-777-2742
FAX: 202-777-2534
Internet: <http://www.apha.org>
AOK 6/01
LOK 0/00

AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY ASSOCIATION (AREMA)
8201 Corporate Dr., Suite 1125
Landover, MD 20785-2230
Ph: 301-459-3200
Fax: 301-459-8077
Internet: <http://www.arema.org>
AOK 5/01
LOK 3/01

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)
1711 Arlingate Lane
P.O. Box 28518
Columbus, OH 43228-0518
Ph: 800-222-2768
Fax: 614-274-6899
Internet: <http://www.asnt.org>
AOK 5/01
LOK 6/00

AMERICAN SOCIETY FOR QUALITY (ASQ)
600 North Plankinton Avenue
Milwaukee, WI 53202-3005
Ph: 800-248-1946
Fax: 414-272-1734
Internet: <http://www.asq.org>
AOK 5/01
LOK 3/01

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Ph: 610-832-9585
Fax: 610-832-9555
Internet: <http://www.astm.org>
AOK 5/01
LOK 3/01

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191-4400
Ph: 703-295-6300 - 800-548-2723
Fax: 703-295-6222
Internet: <http://www.asce.org>
e-mail: marketing@asce.org
AOK 5/01
LOK 3/01

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
Ph: 800-527-4723 or 404-636-8400
Fax: 404-321-5478
Internet: <http://www.ashrae.org>
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-- End of Section --

UFGS-01451A (May 2002)

SECTION 01451A

CONTRACTOR QUALITY CONTROL

05/02

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740 (2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 5 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities must be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

- g. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Additional Requirements for Design Quality Control (DQC) Plan

The following additional requirements apply to the Design Quality Control (DQC) plan:

(1) The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents shall be technically reviewed by competent, independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR). In addition, the DQC Plan shall incorporate the Lessons Learned Databases provided by the Government. The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

(2) The Contractor shall include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This should be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. The schedule shall include review and correction periods associated with each item. This should be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, the Contractor shall submit a revised schedule reflecting the change within 7 calendar days. The Contractor shall include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted at each design phase as part of the project documentation. Example checklists can be found in ER 1110-1-12.

(3) The DQC Plan shall be implemented by a Design Quality Control Manager who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional

engineer or architect. The Contractor shall notify the Contracting Officer, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

The Contracting Officer will notify the Contractor in writing of the acceptance of the DQC Plan. After acceptance, any changes proposed by the Contractor are subject to the acceptance of the Contracting Officer.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 7 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space,

filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 5 years' construction experience on construction similar to this contract OR a construction person with a minimum of 10 years' experience in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: mechanical and submittals clerk. These individuals shall be directly employed by the prime Contractor and may not be employed by a supplier or sub-contractor on this project; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

Experience Matrix

	Area	Qualifications
a.	Mechanical	Graduate Mechanical Engineer with 5 years' experience or person with 10 years' related experience
b.	Submittals	Submittal Clerk with 2 years' experience

3.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is offered on a quarterly basis within the Savannah District boundaries. CQC System Managers who have

not successfully completed this course must attend the next available training session. Failure to successfully complete this training within the next available training date will be grounds for removal as CQC System Manager. There is currently a nominal fee to cover the cost of the training materials for Contractors who have current contracts with the Savannah District.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements. When Section 15950A HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS; 15951A DIRECT DIGITAL CONTROL FOR HVAC; 15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS; or 15995A COMMISSIONING OF HVAC SYSTEMS are included in the contract, the submittals required by those sections shall be coordinated with Section 01330 SUBMITTAL PROCEDURES to ensure adequate time is allowed for each type of submittal required.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.

- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial

test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the following address:

US Army Engineer District, Savannah
Environmental & Materials Unit
200 North Cobb Parkway
Building 400, Suite 404
Marietta, GA 30062

Coordination for each specific test will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once

this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms are included in Attachment 1 to Section 00800.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

02/97

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Plan

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.1.2 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works. All personnel requiring access to the project work site are required to register their vehicles and obtain vehicular decals for access to Fort Benning. Vehicles are subject to search.

1.1.3 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the military installation.

1.2 NOT USED

1.3 AVAILABILITY AND USE OF UTILITY SERVICES

1.3.1 Payment for Utility Services

The Government will make all reasonably required utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

1.3.2 Meters and Temporary Connections

The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall provide and maintain necessary temporary connections, distribution lines, and meter bases (Government will provide meters) required to measure the amount of each utility used for the purpose of determining charges. The Contractor shall notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired so that a utilities contract can be established. The Government will provide a meter and make the final hot connection after inspection and approval of the Contractor's temporary wiring installation. The Contractor shall not make the final electrical connection.

1.3.3 Advance Deposit

An advance deposit for utilities consisting of an estimated month's usage or a minimum of \$50.00 will be required. The last monthly bills for the fiscal year will normally be offset by the deposit and adjustments will be billed or returned as appropriate. Services to be rendered for the next fiscal year, beginning 1 October, will require a new deposit. Notification of the due date for this deposit will be mailed to the Contractor prior to the end of the current fiscal year.

1.3.4 Final Meter Reading

Before completion of the work and final acceptance of the work by the Government, the Contractor shall notify the Contracting Officer, in writing, 5 working days before termination is desired. The Government will take a final meter reading, disconnect service, and remove the meters. The Contractor shall then remove all the temporary distribution lines, meter bases, and associated paraphernalia. The Contractor shall pay all outstanding utility bills before final acceptance of the work by the Government.

1.3.5 Current Utility Rates:

Water	0.8259 per 1,000 gallons
Electricity	0.0493 per KWH
Sewer	1.2521 per Kgallons based on 80% of water usage
Natural Gas	0.7730 per CCF

1.3.6 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.3.7 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired.

1.4 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.4.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

1.4.2 Project Signs

The Contractor shall furnish and install a project sign at the location selected by the Contracting Officer. The project sign shall be painted on 1/2 inch thick exterior grade plywood. The sign layout shall be in accordance with the graphic format shown in Attachment 1 to Section 00800. The 4-foot by 4-foot right-hand section shall be painted white (Color No. 37875, Fed. Std. 595a) with black (Color No. 37038, Fed. Std. 595a) lettering. The 2-foot by 4-foot left-hand section shall be painted red (Color No. 12199, Fed. Std. 595a) with white lettering.

1.5 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.5.1 Haul Roads

The Contractor will be required to use the haul routes shown on the plans unless otherwise permitted in writing by the Contracting Officer. When haul routes are not designated on the plans, the Contractor must obtain approval of the Contracting Officer of haul routes he intends to use. The Contractor shall maintain the haul routes and shall keep the dust problem under control by wetting the surface as needed. Sweeping and cleaning of pavements will be done as necessary to remove spillage resulting from the hauling operations. After all hauling has been completed, the Contractor shall restore the earth areas used for the haul routes to original condition by final grading, shaping, compacting, and grassing, and shall clean and sweep all paved areas as required. Any pavement damaged as a result of hauling operations under this contract for both the earth and other materials shall be promptly repaired by the Contractor, as approved by the Contracting Officer. The cost of maintenance and repair of the haul routes, as mentioned above, shall be considered as a subsidiary obligation of the

Contractor. The axle load of earth hauling equipment operating on paved streets shall not exceed 18,000 pounds.

1.5.2 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.6 CONTRACTOR'S TEMPORARY FACILITIES

1.6.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.6.2 Storage Area

The Contractor shall construct a temporary 6 foot high chain link fence around trailers and materials. The fence shall include plastic strip inserts, colored brown, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the military boundaries. Trailers, equipment, or materials shall not be open to public view with the exception of those items which are in support of ongoing work on any given day. Materials shall not be stockpiled outside the fence in preparation for the next day's work. Mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment, shall be parked within the fenced area at the end of each work day.

1.6.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but shall be within the military boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or equipment stored in this area. Utilities will not be provided to this area by the Government.

1.6.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the military property.

1.6.5 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the construction site shall be mowed for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.6.6 New Building

In the event a new building is constructed for the temporary project field office, it shall be a minimum 12 feet in width, 16 feet in length and have a minimum of 7 feet headroom. It shall be equipped with approved electrical wiring, at least one double convenience outlet and the required switches and fuses to provide 110-120 volt power. It shall be provided with a work table with stool, desk with chair, two additional chairs, and one legal size file cabinet that can be locked. The building shall be waterproof, shall be supplied with heater, shall have a minimum of two doors, electric lights, a telephone, a battery operated smoke detector alarm, a sufficient number of adjustable windows for adequate light and ventilation, and a supply of approved drinking water. Approved sanitary facilities shall be furnished. The windows and doors shall be screened and the doors provided with dead bolt type locking devices or a padlock and heavy duty hasp bolted to the door. Door hinge pins shall be non-removable. The windows shall be arranged to open and to be securely fastened from the inside. Glass panels in windows shall be protected by bars or heavy mesh screens to prevent easy access to the building through these panels. In warm weather, air conditioning capable of maintaining the office at 50 percent relative humidity and a room temperature 20 degrees F below the outside temperature when the outside temperature is 95 degrees F, shall be furnished. Any new building erected for a temporary field office shall be maintained by the Contractor during the life of the contract and upon completion and acceptance of the work shall become the property of the Contractor and shall be removed from the site. All charges for telephone service for the temporary field office shall be borne by the Contractor, including long distance charges up to a maximum of \$75.00 per month.

1.6.7 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

1.7 NOT USED

1.8 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as

telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.9 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.10 NOT USED

1.11 NOT USED

1.12 INSTALLATION REGULATIONS

The employees of the Contractor will be required to abide by all installation regulations as published by the Commanding Officer. A copy of these regulations can be obtained from the Area/Resident Engineer at the installation. All costs in connection therewith shall be included in the contract price for the work.

1.13 TESTING LABORATORIES

Testing is required to be performed by the Contractor as part of his Quality Control Program to verify contract compliance. This Quality Control Testing is to be conducted by a project or commercial laboratory which has been found adequate and qualified by a Corps of Engineers Division Laboratory Inspection Team.

1.13.1 Approved Testing Laboratories

A composite listing of approved testing laboratories within the Savannah District is available upon request. The Contractor should engage the services of a laboratory contained in the composite list. Contractors may obtain the list by calling (678) 354-0310. Fax requests can be made to number (678) 354-0330.

1.13.2 Other Laboratory Services

The Contractor may engage the services of a laboratory other than those approved by Corps of Engineers District Laboratory Inspection Team if they comply with the following:

- a. The Contractor identifies and proposes the unapproved laboratory a minimum of 90 days prior to the start of testing. This time is necessary to allow for scheduling an inspection by a Corps of Engineers District Laboratory team. The time for Government inspection will not be the basis for an increase in the contract performance period.

b. All costs of Government inspection shall be the responsibility of the Contractor.

c. The Contractor may request Government inspection and approval prior to award by forwarding a written request to:

US Army Engineer District, Savannah
Environmental and Materials Unit
200 North Cobb Parkway
Building 400, Suite 404
Marietta, GA 30062

1.14 NOT USED

1.15 ENVIRONMENTAL EVALUATION FOR SITE CONTAMINATION - CATEGORY I

1.15.1 Site Evaluation

The Chapel job site has been evaluated for potential site contamination. The site is located in a traditionally nonhazardous location. The installation has no reason to suspect contamination.

1.15.2 Contractual Responsibilities of All Parties in the Event of Encounter with Contamination

If the Contractor encounters materials or conditions which indicate that there may be contamination on the site, the Contractor shall stop all work on the job site and report the discovery of the contaminants to the Contracting Officer's Representative (COR). The COR, will issue a written order to the Contractor to resume work or to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government as provided in FAR 52.242-14 - SUSPENSION OF WORK. The Government will be responsible for making an assessment of the contaminated site if this course of action is determined to be appropriate. After the assessment has been completed, the Government reserves the right to the following courses of action:

- a. Direct the Contractor to resume work.
- b. Clean up the contaminated site prior to directing the Contractor to resume work. The COR will determine whether the cleanup is to be accomplished by others or the Contractor.
- c. Relocate the project site.
- d. Terminate the contract for the convenience of the Government as provided in FAR 52.249-1 - TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SHORT FORM) or FAR 52.249-2 - TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) - ALTERNATE I as applicable.

1.16 NOT USED

1.17 NOT USED

1.18 CONSTRUCTION SCHEDULE RESTRAINTS - FORT BENNING

1.18.1 Occupancy

The new work to be performed is to be accomplished near facilities which will be occupied and in normal usage during the course of construction. The renovation to be performed is to be accomplished in facilities which will be unoccupied but furnished during the course of construction. It is the intent of these provisions to provide for maximum coordination between construction activities pursuant to this contract and concurrent ongoing routine activities of base personnel. Interference with and inconvenience to the occupants or routine of the facility shall be held to an absolute minimum.

1.18.2 Protection

Contractor is responsible to provide such covering, shields and barricades as are required to protect building occupants, equipment, stores, supplies, etc., from dust, debris, weather intrusion, water, moisture or other cause of damage resulting from construction.

1.18.3 Phasing and Sequence

1.18.3.1 General

In addition to the submittals required by clause SCHEDULES FOR CONSTRUCTION CONTRACTS (see SECTION 00700, FAR 52.236-15) the Contractor shall submit for approval a summary work schedule setting forth schedule dates for initiation and completion of construction in each work area. No work shall be performed prior to approval of this schedule and all work shall be performed in strict adherence thereto. If departures from this schedule appear to be required or desired, the Contracting Officer shall be promptly notified and his approval will be required prior to implementation of said departure(s).

1.18.3.2 Special Work Restraints

Any work outside of the stated limits of work will require the submission of Form FB-144-R for environmental clearance. Construction in these areas cannot commence until the completion of the NEPA process and an approved Form FB-144-R is returned to the Contracting Officer.

1.18.4 Time of Performance

1.18.4.1 Access to Buildings

All work requiring access to building interiors excluding attics, crawl spaces, etc., and all other work shall be performed between 7:30 a.m. and 4 p.m. (normal working hours for base where project is located) excluding official holidays, unless otherwise indicated or approved by the Contracting Officer. Requests to work during other than these normal hours shall be made in writing at least 36 hours in advance. For example, a request to work on a Saturday shall be submitted no later than Thursday at noon.

1.18.4.2 Work Requiring Outages

Work requiring outages of utilities or building systems will be accomplished during normal working hours or after normal working hours and/or on weekends in accordance with prior approved schedule(s).

1.18.5 Outages

Contractor's work requiring outages of utility systems or building systems will require 2 weeks' advance notice and will be subject to the approval of the Contracting Officer. Notice shall include type of outage, date, and time outage will commence and estimated duration of outage.

1.18.6 Continuity

All tools, labor and materials required to complete any item of work within a given work area or requiring an outage of any building utility or system shall be available at the site prior to commencement thereof. Once work has commenced on an item of work, said work shall be continuously and diligently performed to completion and acceptance. Breaks in work to be negotiated with the Contracting Officers Representative if other than Holidays.

1.18.7 Road Closures

Requests are to be submitted in writing for approval by the Contracting Officer 3 weeks prior to any and all road closures (partial or full closure).

1.18.8 Location of Office Trailers and Material Storage Areas

a. Contractor shall establish his office trailers and material storage areas within the confines of the limits of the general construction area/site. Contractor to submit to the Contracting Officer within 14 calendar days after award of contract his "area/land" requirements for evaluation by the Contracting Officer and the DFEL (Mr. Dominick DeCarlo, Real Property Master Planning Branch, 545-2004). The non-exclusive use of this Government property will require the Contractor signing a license to authorize "non-exclusive use of property" under the contract. The Contractor may terminate this signed license at any time by giving the Contracting Officer and the DFEL POC at least 10 calendar day's notice in writing. The license will terminate upon termination of the contract. Additionally, the Contracting Officer can inform the Contractor to vacate the site (within 14 calendar days of notification) if the conditions of the license and/or the following conditions are not adhered to:

(1) The contractor shall install and maintain fencing material containing brown "slats" or "fabric material" at the perimeter of site. Locations of fencing may be adjusted by written coordination with the Contracting Officer and DFEL (Mr. Dominick DeCarlo, Real Property Master Planning Branch, 545-2004).

(2) The contractor shall be responsible for keeping the designated area and surrounding area clear of debris, free of contractor's junk and used and/or excess materials at all times.

(3) The contractor shall be responsible for the security of stored materials. There will be no storage of any equipment and/or contractor's materials beneath the drip line of any (meaning all) trees within the contractor's area.

(4) The contractor shall maintain good grounds keeping of the area.

(5) Parking of equipment and POV's belonging to contractor, his employees, and other representatives shall be confined to parking spaces nearest contractor's office trailers or within contractor's boundary fence. There will be no parking of any equipment, trailers nor POV's beneath the drip line of any (meaning all) trees within the contractor's area nor on grassed areas outside the boundary fence.

(6) Contractor shall return the land, landscape features, pavement, etc. to its original condition (condition prior to occupancy by contractor) upon completion of the construction contract. Contractor to provide the Contracting Officer two copies of 35mm color photographs and one video tape of the office trailers and material storage areas sites prior to their disturbance.

b. The contractor shall pay for utility lines/connections to contractor's and subcontractor's trailers. This includes all materials and labor for connection to the nearest Fort Benning or non-government owned utility system.

c. Contractor shall provide meters for all utilities connected to contractor's and subcontractor's trailers, material storage areas, existing buildings and structures assigned to the contractor and all utilities used by the contractor's work force at the construction/project/storage sites. Prior to commencing work of the construction contract, the contractor shall be required to furnish in writing to the Contracting Officer the following listing of data for each meter contractor-furnished and installed under this contract:

(1) Manufacturer for meters, including published manufacturer's data description sheet.

(2) Make, model, number and serial number of meter.

(3) Meter class, voltage and test amperes of meter (electrical).

(4) Watt-hour constant (Kh), number of dials, and register ratio (Rr) of meter (electrical).

(5) Register meter multiplier (kr) necessary to convert given readings to actual kilowatt-hours of usage. If the watt-hour requires the use of CT's (current transformers) or PT's (potential transformers), the contractor shall provide the CT and/or the PT ratios of those used in order to give the calculated transformer factor necessary to convert given readings to actual kilowatt hours of usage (electrical).

(6) Location of meter where installed (building number/street address, or descriptive locations).

(7) Related contract cost.

(8) Indicate meter readings upon installation and date of installation.

(9) Indicate metered electrical service size with respect to ampacity, wire size, voltage and number of phases.

d. Additional land and facilities on Fort Benning (other than that identified in Contractor's license or in contract documents) will not be

available for the contractor's use for the duration of the contract. Contractor will have to seek land or facilities outside the Fort Benning Military Reservation for office use, material storage, etc.

e. Contractor shall return any buildings and structures, land, landscape features, pavement, etc. to its original condition (condition prior to occupancy by contractor) upon completion of the construction contract. Contractor to provide the Contracting Officer two copies of 35mm color photographs and one video tape of sites to be disturbed prior to their disturbance.

f. All landscape features within the construction site (and within 30 feet of the construction limits) not identified for removal shall be protected or appropriate mitigation measures taken to correct any and all damage. Where, in the opinion of the Contracting Officer or the DFEL's EMD, trees or other landscape features that may be defaced, bruised, injured or otherwise damaged by the contractor's equipment or operations, the Contracting Officer will direct the contractor to adequately protect such trees with sturdy barricades at the drip line or other features by appropriate measures. Contractor shall not allow his vehicles, his subcontractor's and material supplier's vehicles, and associated work force privately owned vehicles, to include the exterior storage of materials and supplies, to park or be stored beneath the drip line of any tree or other landscape feature not identified for removal.

g. Contractor shall be responsible for keeping the designated construction area (to include ten feet beyond any construction fence) clear of debris, free of contractor's junk and used and/or excess materials at all times. Contractor shall be responsible for the security of stored materials within the area. Contractor shall maintain good groundskeeping of the area.

h. Contractor is responsible for replacing/repairing all telephone/communication lines cut or damaged by his work force or subcontractors. Contractor shall contact Fort Benning's Directorate of Information Management office for cable spotting. All requests for cable spots will be submitted on DA Form 3938 with an accompanying print of the area in which the excavation will be done. Request must be submitted NLT 72 hours prior to digging. At the time the cable spot is completed, the copy of the print will be annotated and initialed by both the Fort Benning telephone contractor's representative and representative of the requester. The copy will be filed with Directorate of Information Management's copy of the DA Form 3938. Request for emergency assistance will be accepted on a case by case basis. POC telephone number - (706) 545-2322/4660.

i. Government furnished equipment installed by the contractor: Contractor will be required to sign for and be responsible for the security of any government equipment upon delivery.

1.18.9 Fire Protection

Contractor will obtain a commercial telephone for the office site, which will be in the automated E911 system for Fort Benning.

1.18.10 DD Form 1354

Contractor to complete DD Form 1354 (included in Attachment 1 to Section 00800) in accordance with AR 420-17 at the completion of work on any

delivery order or phase of work in the contract. A preliminary DD Form 1354 will be submitted to the Contracting Officer and forwarded to DFEL POC (Mr. Dominick DeCarlo, Real Property Master Planning Branch, 545-2004) for comments. The Contracting Officer will verify costs on the DD Form 1354 in the appropriate block of the form and return the preliminary form to the contractor for incorporation into final document. Attached to the DD Form 1354 will be separate lists of any contractor furnished/contractor installed equipment and government furnished/contractor installed equipment. This final submittal will be reviewed by DFEL, for content and compliance with AR 420-17. A corrected DD Form 1354 will be submitted to the Contracting Officer at the Final Inspection. A copy of the corrected "electronic" as-built drawing "files" will be provided on a CD as part of the DD Form 1354 submittal.

1.18.11 FB (ENG) Form 51

Contractor to complete FB (ENG) Form 51 (included in Attachment 1 to Section 00800) in accordance with AR 405-45, Chapter 2. A preliminary FB Form 51 will be submitted to the Contracting Officer at the Pre-final Inspection. This submittal will be reviewed by Real Estate Section, DFEL, for content and compliance with AR 405-45. A corrected FB Form 51 will be submitted to the Contracting Officer at the Final Inspection.

1.18.12 Energy Used In Testing of All Contractor Installed Equipment

Contractor shall contact Energy and Utilities Division - (706) 545-4542 - prior to testing all heating or cooling systems (under load conditions). At no time after the acceptance of the facilities by the Contracting Officer will the contractor test the heating or cooling systems (under load conditions) during any off season.

1.18.13 Waste Materials

Contractor will not be allowed to dispose of any waste construction materials and/or demolition materials on Fort Benning. Contractor to dispose of all trash and debris (to include removed trees, tree trimmings, and demolished landscaping materials) off the Fort Benning Reservation.

1.18.14 Cultural Sites

As part of the NEPA process a cultural resource survey of the construction site has determined that project area has been previously disturbed. However, there is a chance that intact archaeological deposits may be encountered during construction. With this in mind, the contractor will notify the Contracting Officer two weeks in advance of contractor's commencement of site grading and footing excavations so that Environmental Management Division personnel can monitor the construction site during these footing excavations and site grading. Contractor will not be allowed to proceed with footing excavations and site grading without being monitored. If intact archaeological deposits are encountered, the Contractor will notify the Contracting Officer immediately, who therefore will notify DFEL Environmental Management Division personnel (POC is Dr. Chris Hamilton, Cultural Resources Specialist, 545-2377).

1.18.15 Borrow Pit

At the time of contract award, there exists no on-post borrow pit available for earth materials to fill trenches. Contractor to find off post fill material if required.

1.18.16 Non-Contaminated Salvageable and Recyclable Materials

Non-contaminated salvageable and recyclable materials within the construction limits to be demolished, to include (but not limited to) such items as metal drainage structures (frames, tops, grates); metal piping; metal electrical conduit, electrical wiring and controls; aluminum items including windows and screens; metal frames; metal and wood doors with builders hardware; metal lighting fixtures (less ballast and lamps) and panels; metal lighting poles; metal duct work; miscellaneous metals; and plumbing fixtures and valves (serviceable), shall be delivered to the Defense Reutilization and Marketing Office (DRMO) at Building 326, Mr. Denham, telephone (706) 545-7318 7206/3497. Material must be segregated by type of material (i.e., brass, copper, aluminum, steel/iron, etc.). Documentation of turn-in of various groupings of items shall be coordinated through the Contracting Officer. All other materials shall be properly disposed of off the Fort Benning Reservation.

1.18.17 Marketable Timber

Merchantable timber on the construction site will be stockpiled by the contractor for pickup by others. Merchantable timber is specified as:

1.18.18 Pine Trees

All pine trees measuring 5 inches at DBH (4-1/2 feet) and larger which contain at least 10-1/2 feet of merchantable height to a 4-inch top diameter when measuring inside the bark. Most stems have more than twenty (20) feet of merchantable height.

1.18.19 Hardwood Trees

All hardwood trees measuring 6 inches at DBH (4-1/2 feet) and larger which contain at least 20 feet of merchantable height to a 5-inch top diameter when measuring inside the bark. Contractor to notify the Natural Resources Branch of Environmental Management Division at (706) 544-6206/6120 two weeks prior to site clearing in order to coordinate timber harvesting.

- 1.19 NOT USED
- 1.20 NOT USED
- 1.21 NOT USED
- 1.22 NOT USED
- 1.23 NOT USED
- 1.24 NOT USED
- 1.25 NOT USED
- 1.26 NOT USED
- 1.27 NOT USED
- 1.28 NOT USED
- 1.29 NOT USED

1.30 REQUEST FOR INFORMATION (RFI) SYSTEM

The Government has developed an electronic database, the Request for Information (RFI) System, to track and answer Contractor questions, requests

for information and clarifications during construction. The use of the RFI System for all requests (the Contractor's as well as the subcontractors'/suppliers') is a contractual requirement for this project. The Contractor will enter the system over the Internet using a WEB browser such as Internet Explorer 5.0 or newer or Netscape 4.7 or newer and any Internet service provider. The Government will provide the Contractor a user identification and password for the system that will only allow the Contractor to enter and view the requests for this project. The Contractor will provide the Government the E-mail address for the individual(s) inputting into the system in order that E-mail messages can be sent from the Government to the Contractor indicating a response to the request. The Government will provide instructions in the use of the RFI system. The Contractor must fill in seven fields in the Contractor Data portion of the RFI form, which include Date Required, Priority, Short Description, Problem Description, Recommended Action, Cost, and Time. The Government will be notified through an E-mail message that the Contractor has entered a request into the system. When the Government has answered the request, an E-mail message will be sent informing the Contractor that the answer to the request is in the system. The Contractor will enter the system to retrieve the answer using the same procedure to enter the question. The RFI System assigns a unique number to each request. The Contractor will not be reimbursed separately for the required use of this system. The Contractor shall include any costs associated with the use of this system into their bid.

1.31 PROGRESS PHOTOGRAPHS

The Contractor shall, during the progress of the project, furnish the Contracting Officer progress photographs and color slides to depict progress of construction. The photographic work shall be performed by a qualified, established, commercial photographer. The photographs and slides shall be taken between the 1st and 5th day of each month and be delivered to the Contracting Officer not later than the 20th day of the same month taken. The photographs and slides shall be taken from not less than six positions for each month as selected by the Contracting Officer. They shall show, inasmuch as practicable, work accomplished during the previous month. The photographs shall be 8-inch by 10-inch color glossy prints and the slides 35 millimeter color slides. Each photograph shall be identified showing date made, contract title and number and a brief description of work depicted and shall be sequentially numbered. The identifying data shall be placed on the back of the prints. Slides shall have a number placed on the frame corresponding to the appropriate identified print, the name of the project, the date and a brief description of work depicted. No identifying data shall appear on the face of prints or in the viewing area of slides. One copy of each photograph and the corresponding negative and slide shall be furnished to the Contracting Officer by the time stipulated above. No separate payment will be made for these services and all costs in connection therewith shall be considered incidental to costs of the overall project.

1.32 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored

material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.33 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

SECTION 01572

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
10/01

1.1 GOVERNMENT POLICY

Government policy is to apply sound environmental principles in the design, construction and use of facilities. As part of the implementation of that policy the Contractor shall: (1) practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction and demolition waste from landfills and incinerators and to facilitate their recycling or reuse.

1.2 MANAGEMENT

The Contractor shall take a pro-active, responsible role in the management of construction and demolition waste and require all subcontractors, vendors, and suppliers to participate in the effort. Construction and demolition waste includes products of demolition or removal, excess or unusable construction materials, packaging materials for construction products, and other materials generated during the construction process but not incorporated into the work. In the management of waste consideration shall be given to the availability of viable markets, the condition of the material, the ability to provide the material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates. The Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to recycling of waste. Revenues or other savings obtained for salvage, or recycling shall accrue to the Contractor. Firms and facilities used for recycling, reuse, and disposal shall be appropriately permitted for the intended use to the extent required by federal, state, and local regulations.

1.3 PLAN

A waste management plan shall be submitted within 15 days after contract award and prior to initiating any site preparation work. The plan shall include the following:

- a. Name of individuals on the Contractor's staff responsible for waste prevention and management.
- b. Actions that will be taken to reduce solid waste generation.
- c. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas and equipment to be used for processing, sorting, and temporary storage of wastes.
- d. Characterization, including estimated types and quantities, of the waste to be generated.

e. Name of landfill and/or incinerator to be used and the estimated costs for use, assuming that there would be no salvage or recycling on the project.

f. Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and organizations that accept used materials such as materials exchange networks and Habitat for Humanity.

g. List of specific waste materials that will be salvaged for resale, salvaged and reused, or recycled. Recycling facilities that will be used shall be identified.

h. Identification of materials that cannot be recycled/reused with an explanation or justification.

i. Anticipated net cost savings determined by subtracting Contractor program management costs and the cost of disposal from the revenue generated by sale of the materials and the incineration and/or landfill cost avoidance.

1.4 RECORDS

Records shall be maintained to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed by landfill or incineration. The records shall be made available to the Contracting Officer during construction, and a copy of the records shall be delivered to the Contracting Officer upon completion of the construction.

1.5 COLLECTION

The necessary containers, bins and storage areas to facilitate effective waste management shall be provided and shall be clearly and appropriately identified. Recyclable materials shall be handled to prevent contamination of materials from incompatible products and materials and separated by one of the following methods:

1.5.1 Source Separated Method.

Waste products and materials that are recyclable shall be separated from trash and sorted into appropriately marked separate containers and then transported to the respective recycling facility for further processing.

1.5.2 Co-Mingled Method.

Waste products and recyclable materials shall be placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed.

1.5.3 Other Methods.

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

1.6 DISPOSAL

Except as otherwise specified in other sections of the specifications, disposal shall be in accordance with the following:

1.6.1 Reuse.

First consideration shall be given to salvage for reuse since little or no re-processing is necessary for this method, and less pollution is created when items are reused in their original form. Sale or donation of waste suitable for reuse shall be considered. Salvaged materials, other than those specified in other sections to be salvaged and reinstalled, shall not be used in this project.

1.6.2 Recycle.

Waste materials not suitable for reuse, but having value as being recyclable, shall be made available for recycling whenever economically feasible.

1.6.3 Waste.

Materials with no practical use or economic benefit shall be disposed at a landfill or incinerator.

-- End of Section --

SECTION 01670

RECYCLED / RECOVERED MATERIALS

12/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 247

Comprehensive Procurement Guideline for
Products Containing Recovered Materials

1.2 OBJECTIVES

Government procurement policy is to acquire, in a cost effective manner, items containing the highest percentage of recycled and recovered materials practicable consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The Environmental Protection Agency (EPA) has designated certain items which must contain a specified percent range of recovered or recycled materials. EPA designated products specified in this contract comply with the stated policy and with the EPA guidelines. The Contractor shall make all reasonable efforts to use recycled and recovered materials in providing the EPA designated products and in otherwise utilizing recycled and recovered materials in the execution of the work.

1.3 EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

Various sections of the specifications contain requirements for materials that have been designated by EPA as being products which are or can be made with recovered or recycled materials. These items, when incorporated into the work under this contract, shall contain at least the specified percentage of recycled or recovered materials unless adequate justification (non-availability) for non-use is provided. When a designated item is specified as an option to a non-designated item, the designated item requirements apply only if the designated item is used in the work.

1.4 EPA PROPOSED ITEMS INCORPORATED IN THE WORK

Products other than those designated by EPA are still being researched and are being considered for future Comprehensive Procurement Guideline (CPG) designation. It is recommended that these items, when incorporated in the work under this contract, contain the highest practicable percentage of recycled or recovered materials, provided specified requirements are also met.

1.5 EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

There are many products listed in 40 CFR 247 which have been designated or proposed by EPA to include recycled or recovered materials that may be used by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled or recovered materials and that these products be recycled when no longer needed.

-- End of Section --

UFGS-01780A/S (May 2002)

SECTION 01780A

CLOSEOUT SUBMITTALS

05/02

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

As-Built Drawings;G

Drawings showing final as-built conditions of the project. The final CADD as-built drawings shall consist of one set of electronic CADD drawing files in the specified format, two sets of black-line prints, and one set of the approved working as-built drawings.

SD-03 Product Data

As-Built Record of Equipment and Materials;G

Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

Warranty Management Plan;G

Two sets of the warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. The Contractor shall furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

Warranty Tags

Two record copies of the warranty tags showing the layout and design.

Final Cleaning

Two copies of the listing of completed final clean-up items.

1.2 PROJECT RECORD DOCUMENTS

1.2.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.2.1.1 Government Furnished Materials

Two sets of paper drawings revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for markup of as-built conditions. Electronic CADD files in Microstation format will be provided by the Government at the preconstruction conference for updating CADD file as-built drawings.

1.2.1.2 Working As-Built and Final As-Built Drawings

The Contractor shall revise two sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly basis and at least one set shall be available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Final as-built drawings shall be prepared after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information:

- a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

- b. The location and dimensions of any changes within the building structure.

- c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

- d. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the

Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

f. Changes or modifications which result from the final inspection.

g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.

h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.

i. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

j. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.

(1) Directions in the modification for posting descriptive changes shall be followed.

(2) A Modification Circle shall be placed at the location of each deletion.

(3) For new details or sections which are added to a drawing, a Modification Circle shall be placed by the detail or section title.

(4) For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

(7) The Modification Circle size shall be 12.7 mm (1/2 inch) diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.2.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged

or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.2.1.4 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files. The Contractor will be furnished "as-designed" drawings in Microstation J format compatible with a Windows NT 2000 operating system or Windows XP. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make required corrections, changes, additions, and deletions.

a. Corrections shall be made in the "Model" files rather than the individual sheet file when model files are referenced. Once the model file is corrected the individual sheet file will automatically be corrected.

b. The contractor shall modify the drawings at construction completion to indicate the as-built character of all site components:

(1) These drawings will conform to the level symbology of the model files and be free of any superfluous construction detail. The intent is to show As-Built conditions and should not include any components that are not as-built, i.e., if the pre-work map showed a water line 3' from a curb and was constructed 4' from the curb, the as-built map will show only the final location of the water line.

(2) The grading model file will clearly indicate the final grade of the site at a contour interval not greater than one foot.

(3) The final inverts of all utilities will be shown on the model files. Where utilities were installed which follow the surface of the ground, the depth of that utility will be indicated. Where there is a variance in the depth of the utility, the break point and character of variance will be shown.

(4) The model files will clearly identify all utilities installed with a trace wire and/or cathodic protection.

(5) The model files will show a minimum of two tie points for all subsurface control devices to include valves, manholes, handholes, switches, etc. The tie-points will be directed such that they form a triangle with no inclusive angle less than 30 or greater than 150. No leg of the triangle will be longer than 100'. Valid tie-points will run to identifiable above ground objects such as poles

or building corners as is in keeping of good survey practice for the recovery of monuments.

(6) The model files will clearly indicate the entry point and character of all utilities running to or from structures.

c. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 5 mm (3/16 inch) high. All other contract drawings shall be marked either "AS-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

d. Within 10 days for contracts less than \$5 million or 20 days for contracts \$5 million and above after Government approval of all of the working as-built drawings for a phase of work, the Contractor shall prepare the final CADD as-built drawings for that phase of work and submit two sets of blue-lined prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 7 days for contracts less than \$5 million or 10 days for contracts \$5 million and above the Contractor shall revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 10 days for contracts less than \$5 million or 20 days for contracts \$5 million and above of substantial completion of all phases of work, the Contractor shall submit the final as-built drawing package for the entire project. The submittal shall consist of one set of electronic files on compact disc, read-only memory (CD-ROM), two sets of blue-line prints and one set of the approved working as-built drawings. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.2.1.5 Omitted

1.2.1.6 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs accrued in connection with such drawings shall be considered a subsidiary obligation of the Contractor.

1.2.2 As-Built Record of Equipment and Materials

The Contractor shall furnish one copy of preliminary record of equipment and materials used on the project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government comments. Two sets of final record of equipment and materials shall be submitted 10 days after final inspection. The designations shall be keyed to the related area depicted on the contract drawings. The record shall list the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA

Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used
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1.2.3 Final Approved Shop Drawings

The Contractor shall furnish final approved project shop drawings 30 days after transfer of the completed facility.

1.2.4 Construction Contract Specifications

The Contractor shall furnish final as-built construction contract specifications, including modifications thereto, 30 days after transfer of the completed facility.

1.2.5 Real Property Equipment

The Contractor shall furnish a list of installed equipment furnished under this contract. The list shall include all information usually listed on manufacturer's name plate. The "EQUIPMENT-IN-PLACE LIST" shall include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. A draft list shall be furnished at time of transfer. The final list shall be furnished 30 days after transfer of the completed facility.

1.3 WARRANTY MANAGEMENT

1.3.1 Warranty Management Plan

The Contractor shall develop a warranty management plan which shall contain information relevant to the clause Warranty of Construction in Section 00800. At least 30 days before the planned pre-warranty conference, the Contractor shall submit the warranty management plan for Government approval. The warranty management plan shall include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Warranty information made available during the construction phase shall be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Approved information shall be assembled in a binder and shall be turned over to the Government upon acceptance of the work. The construction warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. A joint 4 month and 9 month warranty inspection shall be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative. Information contained in the warranty management plan shall include, but shall not be limited to, the following:

a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within

the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

b. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

c. A list for each warranted equipment, item, feature of construction or system indicating:

- (1) Name of item.
- (2) Model and serial numbers.
- (3) Location where installed.
- (4) Name and phone numbers of manufacturers or suppliers.
- (5) Names, addresses and telephone numbers of sources of spare parts.
- (6) Warranties and terms of warranty. This shall include one-year overall warranty of construction. Items which have extended warranties shall be indicated with separate warranty expiration dates.
- (7) Cross-reference to warranty certificates as applicable.
- (8) Starting point and duration of warranty period.
- (9) Summary of maintenance procedures required to continue the warranty in force.
- (10) Cross-reference to specific pertinent Operation and Maintenance manuals.
- (11) Organization, names and phone numbers of persons to call for warranty service.
- (12) Typical response time and repair time expected for various warranted equipment.

d. The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

e. Procedure and status of tagging of all equipment covered by extended warranties.

f. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.3.2 Performance Bond

The Contractor's performance bond shall remain effective throughout the construction period.

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, the Contractor shall respond in a timely manner. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.3.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor shall furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, shall be continuously available, and shall be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.3.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and backcharge the construction warranty payment item established.

a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Air Conditioning Systems

- (1) Recreational support.
- (2) Air conditioning leak in part of building, if causing damage.
- (3) Air conditioning system not cooling properly.

Code 1-Doors

- (1) Overhead doors not operational, causing a security, fire, or safety problem.
- (2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors

- (1) Overhead doors not operational.
- (2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical

- (1) Power failure (entire area or any building operational after 1600 hours).
- (2) Security lights
- (3) Smoke detectors

Code 2-Electrical

- (1) Power failure (no power to a room or part of building).
- (2) Receptacle and lights (in a room or part of building).

Code 3-Electrical

Street lights.

Code 1-Gas

- (1) Leaks and breaks.
- (2) No gas to family housing unit or cantonment area.

Code 1-Heat

- (1). Area power failure affecting heat.
- (2). Heater in unit not working.

Code 2-Kitchen Equipment

- (1) Dishwasher not operating properly.
- (2) All other equipment hampering preparation of a meal.

Code 1-Plumbing

- (1) Hot water heater failure.
- (2) Leaking water supply pipes.

Code 2-Plumbing

- (1) Flush valves not operating properly.
- (2) Fixture drain, supply line to commode, or any water pipe leaking.
- (3) Commode leaking at base.

Code 3 -Plumbing

Leaky faucets.

Code 3-Interior

- (1) Floors damaged.
- (2) Paint chipping or peeling.
- (3) Casework.

Code 1-Roof Leaks

Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks

Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)

No water to facility.

Code 2-Water (Hot)

No hot water in portion of building listed.

Code 3-All other work not listed above.

1.3.5 Warranty Tags

At the time of installation, each warranted item shall be tagged with a durable, oil and water resistant tag approved by the Contracting Officer. Each tag shall be attached with a copper wire and shall be sprayed with a silicone waterproof coating. The date of acceptance and the QC signature shall remain blank until project is accepted for beneficial occupancy. The tag shall show the following information.

- a. Type of product/material_____.
- b. Model number_____.
- c. Serial number_____.
- d. Contract number_____.
- e. Warranty period_____from_____to_____.
- f. Inspector's signature_____.
- g. Construction Contractor_____.
- Address_____.
- Telephone number_____.
- h. Warranty contact_____.
- Address_____.
- Telephone number_____.
- i. Warranty response time priority code_____.

j. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

1.4 MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Prior to final inspection and transfer of the completed facility; all reports, statements, certificates, and completed checklists for testing, adjusting, balancing, and commissioning of mechanical systems shall be

submitted to and approved by the Contracting Officer as specified in applicable technical specification sections.

1.5 OPERATION AND MAINTENANCE MANUALS

Operation manuals and maintenance manuals shall be submitted as specified. Operation manuals and maintenance manuals provided in a common volume shall be clearly differentiated and shall be separately indexed.

1.6 FINAL CLEANING

The premises shall be left broom clean. Stains, foreign substances, and temporary labels shall be removed from surfaces. Carpet and soft surfaces shall be vacuumed. Equipment and fixtures shall be cleaned to a sanitary condition. Filters of operating equipment shall be replaced. Debris shall be removed from roofs, drainage systems, gutters, downspouts and boot wash areas. Paved areas shall be swept and landscaped areas shall be raked clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, fences and construction facilities removed. A list of completed clean-up items shall be submitted on the day of final inspection.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

SECTION 01781

OPERATION AND MAINTENANCE DATA
12/01

PART 1 GENERAL

1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data specifically applicable to this contract and a complete and concise depiction of the provided equipment, product, or system. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01330, "Submittal Procedures."

1.1.2 Package Quality

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

1.1.3 Package Content

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission.

1.1.5 Changes to Submittals

Manufacturer-originated changes or revisions to submitted data shall be furnished by the Contractor if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data, shall be submitted by the Contractor within 30 calendar days of the notification of this change requirement.

1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

1.2.1 Operating Instructions

Include specific instructions, procedures, and illustrations for the following phases of operation:

1.2.1.1 Safety Precautions

List personnel hazards and equipment or product safety precautions for all operating conditions.

1.2.1.2 Operator Prestart

Include procedures required to set up and prepare each system for use.

1.2.1.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.2.1.4 Normal Operations

Provide narrative description of Normal Operating Procedures. Include Control Diagrams with data to explain operation and control of systems and specific equipment.

1.2.1.5 Emergency Operations

Include Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of all utility systems including required valve positions, valve locations and zones or portions of systems controlled.

1.2.1.6 Operator Service Requirements

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gage readings.

1.2.1.7 Environmental Conditions

Include a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item/equipment should not be allowed to run.

1.2.2 Preventive Maintenance

Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

1.2.2.1 Lubrication Data

Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph titled "Operator Service Requirements":

- a. A table showing recommended lubricants for specific temperature ranges and applications.
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.
- c. A Lubrication Schedule showing service interval frequency.

1.2.2.2 Preventive Maintenance Plan and Schedule

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical

operation and to minimize corrective maintenance. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

1.2.3 Corrective Maintenance (Repair)

Include manufacturer's recommended procedures and instructions for correcting problems and making repairs.

1.2.3.1 Troubleshooting Guides and Diagnostic Techniques

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.2.3.2 Wiring Diagrams and Control Diagrams

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.2.3.3 Maintenance and Repair Procedures

Include instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.

1.2.3.4 Removal and Replacement Instructions

Include step-by-step procedures and a list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

1.2.3.5 Spare Parts and Supply Lists

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.2.3.6 Corrective Maintenance Work-Hours

Include manufacturer's projection of corrective maintenance work-hours including requirements by type of craft. Corrective maintenance that requires completion or participation of the equipment manufacturer shall be identified and tabulated separately.

1.2.4 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.2.4.1 Parts Identification

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog

1.2.4.2 Warranty Information

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

1.2.4.3 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.2.4.4 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

1.2.4.5 Contractor Information

Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Furnish the O&M data packages specified in individual technical sections. The required information for each O&M data package is as follows:

1.3.1 Data Package 1

- a. Safety precautions
- b. Maintenance and repair procedures
- c. Warranty information
- d. Contractor information
- e. Spare parts and supply list

1.3.2 Data Package 2

- a. Safety precautions
- b. Normal operations
- c. Environmental conditions
- d. Lubrication data
- e. Preventive maintenance plan and schedule
- f. Maintenance and repair procedures
- g. Removal and replacement instructions
- h. Spare parts and supply list
- i. Parts identification
- j. Warranty information
- k. Contractor information

1.3.3 Data Package 3

- a. Safety precautions
- b. Normal operations
- c. Emergency operations
- d. Environmental conditions
- e. Lubrication data
- f. Preventive maintenance plan and schedule
- g. Troubleshooting guides and diagnostic techniques
- h. Wiring diagrams and control diagrams
- i. Maintenance and repair procedures
- j. Removal and replacement instructions

- k. Spare parts and supply list
- l. Parts identification
- m. Warranty information
- n. Testing equipment and special tool information
- o. Contractor information

1.3.4 Data Package 4

- a. Safety precautions
- b. Operator prestart
- c. Startup, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Emergency operations
- f. Operator service requirements
- g. Environmental conditions
- h. Lubrication data
- i. Preventive maintenance plan and schedule
- j. Troubleshooting guides and diagnostic techniques
- k. Wiring diagrams and control diagrams
- l. Maintenance and repair procedures
- m. Removal and replacement instructions
- n. Spare parts and supply list
- o. Corrective maintenance man-hours
- p. Parts identification
- q. Warranty information
- r. Personnel training requirements
- s. Testing equipment and special tool information
- t. Contractor information

1.3.5 Data Package 5

- a. Safety precautions

- b. Operator prestart
- c. Start-up, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Environmental conditions
- f. Preventive maintenance plan and schedule
- g. Troubleshooting guides and diagnostic techniques
- h. Wiring and control diagrams
- i. Maintenance and repair procedures
- j. Spare parts and supply list
- k. Testing equipments and special tools
- l. Warranty information
- m. Contractor information

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

-- End of Section --

APPENDIX A REFERENCES

APPENDIX A

REFERENCES

GOVERNMENT PUBLICATIONS

CODE OF FEDERAL REGULATIONS
Government Printing Office
Washington, DC 20402

49 CFR 192 Transportation of Natural and other Gas by Pipeline:
Minimum Federal Safety Standards

40 CFR 280 Owners and Operators of Underground Storage Tanks

49 CFR 195 Transportation of Hazardous Liquids by Pipeline

10 CFR 430 Energy Conservation Program for Consumer Products

Department of the Navy

Standardization Documents Order Desk
700 Robbins Avenue, Bldg. 4D
Philadelphia, PA 19111-5094

MIL-HDBK-1008 Fire Protection for Facilities Engineering, Design, and
Construction

U.S. Government Printing Office

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

U.S. Government Printing Office (GPO) Style Manual

NON-GOVERNMENT PUBLICATIONS

AIR MOVEMENT AND CONTROL ASSOCIATION
30 W. University Drive
Arlington Heights, IL 60004-1893

AMCA 210 (1985) Laboratory Methods of Testing Fans for Rating

AIR CONDITIONING AND REFRIGERATION INSTITUTE
4301 North Fairfax Drive
Arlington, VA 22203

ARI 310/380 (1993) Packaged Terminal Air-Conditioners and Heat Pumps

ARI 440 (1998) Room Fan-Coil and Unit Ventilator

ARI 445 (1987; R 1993) Room Air-Induction Units

ARI 880 (1998) Air Terminals

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1827 Walden Office Square, Suite 104
Schaumburg, IL 60173-4268

AAMA 101 Voluntary Specifications for Aluminum, Vinyl and Wood
Windows and Glass Doors

AAMA 605 Voluntary Specification Performance Requirements and Test
Procedures for High Performance Organic Coatings on
Aluminum Extrusions and Panels

AAMA 607.1 Voluntary Guide Specifications and Inspection Methods for
Clear Anodic Finishes for Architectural Aluminum

AAMA 1503 Voluntary Test Method for Thermal Transmittance and
Condensation Resistance of Windows, Doors, and Glazed Wall
Sections

AMERICAN BEARING MANUFACTURERS ASSOCIATION
1200 19th Street, NW
Washington, DC 20036-4303

AFBMA Std 9 (1990) Load Ratings and Fatigue Life for Ball Bearings

AFBMA Std 11 (1990) Load Ratings and Fatigue Life for Roller Bearings

AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA)
950 N. Glebe Rd, Suite 160
Arlington, VA 22203-1824

ABMA ISEI Industry Standards and Engineering Information

ACI INTERNATIONAL (ACI)
P.O. Box 9094 Farmington Hills, MI 48333-9094
Ph: 248-848-3800
Fax: 248-848-3801
Internet: <http://www.aci-int.org>

ACI 318-95 Building Code Requirements for Reinforced Concrete

ACI 302 Guide for Concrete Floors and Slab Construction

ACI-ASCE 530 Building Code for Masonry

ACI-ASCE 530.1 Masonry Specifications

AMERICAN NATIONAL STANDARDS INSTITUTE
11 West 42 Street
New York, NY 10036

ANSI B16.5 Pipe Flanges and Flanged Fittings

ANSI Z21.10.1 (1993; Z21.10.1a; Z21.10.1b; Z21.10.1c) Gas Water Heaters
Vol. I, Storage Water Heaters with Input Ratings of 75,000
Btu Per Hour or Less

ANSI Z124. (1995) American National Standard for Plastic Lavatories.

ANSI Z124.6 (1997) Plastic Sinks

ANSI Z21.45 (1995) Flexible Connectors of Other Than All-Metal Construction for Gas Appliances

ANSI C2 (1997) National Electrical Safety Code

ANSI 70 (1996) National Electrical Code

ANSI/TIA/EIA-569-A (1998) Commercial Building Standard for Telecommunications Pathways and Spaces

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
 1801 Alexander Bell Drive
 Reston, VA 20190-4400
 Ph: 800-548-2723
 Fax: 703-295-6333
 Internet: www.pubs.asce.org
 e-mail: marketing@asce.org

ASCE 7 (1995) Minimum Design Loads for Buildings and Other Structures

AMERICAN SOCIETY FOR TESTING AND MATERIALS
 100 Bar Harbor Drive
 West Conshohocken, PA 19428-2959

ASTM E 84 (2000) Surface Burning Characteristics of Building Materials

ASTM D 2846/D 2846M (1999) Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems

ASTM D 2513 (1999; Rev. A) Thermoplastic Gas Pressure Pipe, Tubing, and Fittings

ASTM D 2683 (1998) Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing

ASMT D 3350 (1999) Polyethylene Plastics Pipe and Fittings Materials

ASTM A 53 (1999) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless

ASTM A 106 (1999) Seamless Carbon Steel Pipe for High-Temperature Service

ASTM B 88 (1999) Seamless Copper Water Tube

ASTM D 5686 (1995) "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Pipe Fittings, Adhesive Bonded Joint Type Epoxy Resin, for Condensate Return Lines

ASTM D 2241 (1996b) Poly(Vinyl Chloride) (PVC) Pressure-Rated-Pipe (SDR Series)

ASTM D 1784 (1999a) Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds

ASTM D 1248	(1998) Polyethylene Plastics Molding and Extrusion Materials
ASTM C 591	(1994) Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation
ASTM C 518	(1998) Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM A 134	(1996) Pipe, Steel, Electric-Fusion (Arc)-Welded (Sizes NPS 16 and Over)
ASTM A 135	(1997c) Electric-Resistance-Welded Steel Pipe
ASTM A 139	(1996e1) Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and over)
ASTM A 36/A 36M	(2000) Carbon Structural Steel
ASTM D 2310	(1997) Machine-Made "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
ASTM D 2996	(1996; Rev. A) Filament-Wound "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe
ASTM C 136	(1995a) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 422	(1963; R 1990) Particle-Size Analysis of Soils
ASTM D 1556	(1990) Density of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2,700 kN-m/m ³))
ASTM D 2216	(1992), Laboratory Determination of Water (Moisture) Content of Soil, and Rock
ASTM D 2487	(1990) Classification of Soils for Engineering Purposes
ASTM D 2661	(1991) Acrylonitrile-Butadiene-Styrene (ABS) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D 2665	(Rev. B-91) Poly(Vinyl Chloride) (PVC) Plastic Drains, Waste, and Vent Pipe and Fittings
ASTM D 2666	Polybutylene (PB) Plastic Tubing (1989)
ASTM D 4318	(1993) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM E 119	(1988) Standard Test Methods and Fire Tests of Building Construction and Materials
ASTM E 779	(E1-87) Standard Test Method for Determining Air Leakage Rate by Fan Pressurization

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS
1791 Tully Circle. NE

Atlanta, GA 30329-2305

Standard 62 (1999) Ventilation for Acceptable Indoor Air Quality

Standard 15 (1994) Safety Code for Mechanical Refrigeration

ASHRAE 90.1 (1989; 90.1b; 90.1c; 90.1d; 90.1e; 90.1g; 90.1i 90.11-1995; 90.1m-1995; 90.1n-1997) Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings

ASHRAE Hdbk-IP (1997) Handbook, Fundamentals I-P Edition

AMERICAN SOCIETY OF MECHANICAL ENGINEERS INTERNATIONAL
Three Park Place
New York, NY 10016-5990

ASME B31.8 (1995) Gas Transmission and Distribution Piping Systems

ASME B16.11 (1996) Forged Fittings, Socket-Welding and Threaded

ASME B31.1 (1998; Addenda 1999 and 2000) Power Piping

ASME BPVC SEC VII (1995; Addenda 1995, 1996, and 1997) Boiler and Pressure Vessel Code: Section VII Recommended Guidelines for the Care of Power Boilers

ASME (1996) Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24

ARCHITECTURAL WOODWORK INSTITUTE
1952 Isaac Newton Square W.
Reston, VA 20190

AWI Quality Standards (1999) 7th Edition, Version 1.2

ASSOCIATED AIR BALANCE COUNCIL
1518 K Street NW, Suite 708
Washington, DC 20005

AABC MN-1 (1989) National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems

COUNCIL OF AMERICAN BUILDING OFFICIALS
5203 Leesburg Pike, Suite 708
Falls Church, VA 22041

CABO A117.1 (1992; Errata Jun 1993) Accessible and Usable Buildings and Facilities

ELECTRONIC INDUSTRIES ASSOCIATION (EIA)
2500 Wilson Blvd
Arlington, VA 22201-3834

EIA/TIA 568-B (2001) Commercial Building Telecommunications Cabling Standards

EIA/TIA 569-A (2001, amendment 5) Commercial Building Standard for Telecommunications Pathways and Spaces

ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA
120 Wall Street, 17th Floor
New York, NY 10005-4001

IESNA RP-8 (1983; R 1993) Roadway Lighting

IES LHBK (1993) Lighting Handbook, Reference and Application

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS INC. (IEEE)
445 Hoes Lane, P.O. Box 1331
Piscataway, NJ 08855-1331

Standard for Use of the International System of Units (SI):
the Modern Metric System
International Approval Services (IAS)
8501 E. Pleasant Valley Rd
Cleveland, OH 44131

IAS Directory (1999) IAS Directory of AGA & CGA Certified Appliances and
Accessories

INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS
20001 Walnut Drive South
Walnut, CA 91789-2825

IAPMO Z124.1 (1995) Plastic Bathtub Units

IAPMO Z124.3 (1995) Plastic Lavatories

IAPMO Z124.5 (1997) Plastic Toilet (Water Closets) Seats

IAPMO Z124.9 (1994) Plastic Urinal Fixtures

UNIFIED FACILITIES CRITERIA

UFC 1-200-01 31 JULY 2002 DESIGN: GENERAL BUILDING REQUIREMENTS

UFC 4-010-01 31 JULY 2002 DoD Minimum Antiterrorism Standards for Buildings.

INTERNATIONAL CODE COUNCIL, INC
5203 Leesburg Pike, Suite 708
Falls Church, VA 22041-3401

ICC (2000) International Building Code

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
5360 Workman Mill Road
Whittier, CA 90601-2298

ICBO (1997) Uniform Building Code

NATIONAL ASSOCIATION OF CORROSION ENGINEERS INTERNATIONAL
1440 South Creek Drive
Houston, TX 77084-4906

NACE RP0169 (1996) Control of External Corrosion on Underground or
Submerged Metallic Piping Systems

NACE RP0185 (1996) Extruded, Polyolefin Resin Coating Systems with Soft
Adhesives for Underground or Submerged Pipe

NATIONAL ASSOCIATION OF PLUMBING - HEATING - COOLING CONTRACTORS
180 S. Washington Street
Falls Church, VA 22046

NAPHCC Plumbing Code (1996) National Standard Plumbing Code

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
1300 N 17th Street, Suite 1847
Rosslyn, VA 22209

NEMA C12.1 (1995) Code for Electricity Metering

NEMA LD 3 High Pressure Decorative Laminates

NEMA PB 1 (1995) Panelboards

NATIONAL ENVIRONMENTAL BALANCING BUREAU
8575 Grovemont Circle
Gaithersburg, MD 20877-4121

NEBB Procedural Stds (1991) Procedural Standards for Testing Adjusting
Balancing of Environmental Systems

NATIONAL FIRE PROTECTION ASSOCIATION
One Batterymarch Park
Quincy, MA 02269-9101

NFPA 10 (1998) Standard for Portable Fire Extinguishers

NFPA 30 (2000) Flammable and Combustible Liquids Code

NFPA 31 (1997; TIA 97-11) Installation of Oil Burning Equipment

NFPA 54 (1999) National Fuel Gas Code

NFPA 58 (1998; Errata 58-98-1) Liquefied Petroleum Gas Code

NFPA 70 (1999) National Electrical Code (NEC)

NFPA 80 (1999) Standard for Fire Doors and Fire Windows

NFPA 90A (1993) Installation of Air Conditioning and Ventilating
Systems

NFPA 101 (2000) Life Safety Code

NFPA 1581 (2000) Standard on Fire Department Infection Control
Program

NFPA 1710 (2001) Organization and Development of Fire Suppression
Operations, Emergency Medical Operations, and Special
Operations to the Public by Career Fire Departments

PLUMBING AND DRAINAGE INSTITUTE
45 Bristol Drive, Suite 101

South Easton, MA 02375

PDI G 101 (1996) Testing and Rating Procedure for Grease Interceptors
with Appendix of Sizing and Installation Data

PDI WH201 (1992) Water Hammer Arrestors

PDI WH 201 (1992) Water Hammer Arresters

SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION
PO Box 221230
Chantilly, VA 20153-1230

SMACNA HVAC Duct Const Stds (1995; Addenda Nov 1997)) HVAC Duct
Construction Standards - Metal and Flexible

SMACNA Arch. Manual (1993; Errata; Addenda Oct 1997) Architectural Sheet
Metal Manual

STEEL DOOR INSTITUTE (SDI)
30200 Detroit Road
Cleveland, OH 44145-1967

ANSI A250.8/SDI 100 Standard Steel Doors and Frames

AMERICANS WITH DISABILITIES ACT (ADA)

Accessibility Guidelines for Buildings and Facilities

Available from US Architectural and Transportation Barriers Compliance Board,
1111 18th Street, N.W., Suite 501, Washington, DC 20036-
3894, (202) 653-7834 v/TDD or (202) 653-7863 FAX

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475
Fax: 800-525-5562
Internet: www.aashto.org

ARMY TECHNICAL INSTRUCTIONS (TI)

Internet: <http://www.hnd.usace.army.mil/techinfo/>

TI 800-01 Design Criteria

TI 804-01 Area Planning, Site Planning and Design

TI 804-11 POV Site Circulation and Parking

TI 809-01 Load Assumptions for Buildings

TI 809-02 Structural Design Criteria for Buildings

TI 809-04 Seismic Design for Buildings

TI 809-04 Seismic Design For Buildings

TI 809-07	Design of Cold-Formed Load Bearing Steel Systems
TI 809-30	Metal Building Systems
TI 810-10	Mechanical Design Heating, Ventilating, and Air Conditioning
TI 810-11	Heating, Ventilating and Air Conditioning (HVAC) Control System
TI 814-01	Water Supply
TI 814-03	Water Distribution
TI 814-10	Wastewater Collection
TI 822-20	Surface Drainage Quad-Service Antiterrorism/Force Protection Construction Standard

ARMY/AIR FORCE TECHNICAL MANUAL TM

Internet: <http://www.hnd.usace.army.mil/techinfo/engpubs.htm>

TM 5-803-5	Installation Design
TM 5-803-13	Landscape Design and Planting Criteria
TM 5-803-13	Site Planning and Design
TM 5-822-2	General Provisions and Geometric Design for Roads, Streets, Walks and Open Storage Areas
TM 5-822-5	Pavement Design for Roads, Streets, Walks and Open Storage Areas
TM 5-822-7	Standard Practice for Concrete Pavements
TM 5-822-8	Bituminous Pavements - Standard Practice
TM 5-809-12	Concrete Floor Slabs on Grade Subjected to Heavy Loads
TM 5-813-4	Water Supply, Water Storage
TM 5-822-5	Pavement Design for Roads, Streets, Walks, and Open Storage Areas
TM 5-822-7	Standard Practice for Concrete Pavements
TM 5-822-8	Bituminous Pavements Standard Practice
TM 5-822-13	Pavement Design for Roads, Streets, and Open Storage Areas, Elastic Layered Method
TM 5-811-7	Electrical Design, Cathodic Protection

ARMY/COE MILITARY HANDBOOKS

Internet: <http://www.hnd.usace.army.mil/techinfo/engpubs.htm>

MIL-HDBK-1190 Sept. 1987, Facility Planning and Design Guide

MIL-HDBK-1008C Fire Protection for Facilities Engineering, Design, and Construction, 1997

ARMY REG 190-11 Physical Security of Arms, Ammunition and Explosives

ENGINEER TECHNICAL LETTER (ETL), MANUAL (EM) AND REGULATIONS (ER)

EM 1110-2-3102 General Principals of Pumping Station Design and Layout

ETL 91-6 Cathodic Protection

ETL 1110-3-466 Selection and Design of Oil/Water Separators at Army Facilities

ETL 1110-3-474 Cathodic Protection

ETL 1110-3-491 Sustainable Design for Military Facilities

ETL 1110-9-10 Cathodic Protection System Using Ceramic Anodes

ER 1110-3-110 Information Systems Design in Support of Military Construction

AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC)

Timber Construction Manual

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

American Institute of Steel Construction (AISC), Manual of Steel Construction

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C500 (1986) Gate Valves for Water and Sewerage Systems (DOD adopted)

AWWA C502 (1985) Dry-Barrel Fire Hydrants

AMERICAN WELDING SOCIETY (AWS)

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 340/1-90-018 (1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance

EPA 340/1-90-019 (1990) Asbestos/NESHAP Adequately Wet Guidance

EPA 560/5-85-024 (1985) Guidance for Controlling Asbestos Containing Materials in Buildings

FACTORY MUTUAL SYSTEM (FM) STANDARDS

FEDERAL STANDARD SPECIFICATIONS (FS)

FED-STD 595 (Rev B) Colors

FS WW-P-541 Plumbing Fixtures

FS WW-P-541/5 Plumbing Fixtures (Sinks, Kitchens, Service, Laundry Trays
- Detail Specification)

INTERNATIONAL BUILDING CODE (IBC) OF THE INTERNATIONAL CONFERENCE OF BUILDING
OFFICIALS, 2000 Edition

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS

ILLUMINATING ENGINEERING SOCIETY (IES)

LIGHTING HANDBOOK REFERENCE AND APPLICATION, 9TH EDITION

INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)

IEEE STD 144 IEEE Recommended Practice for Grounding of Industrial and
Commercial Power Systems

INTERNATIONAL PLUMBING CODE

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM-01 (1988) Metal Finishes Manual for Architectural and Metal
Products

NATIONAL ASSOCIATION OF CORROSION ENGINEERS (NACE)

NACE RP0169 Control of External Corrosion and Underground or Submerged
Metallic

NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)

Specifications for the Design and Construction of Load Bearing Concrete
Masonry

Building Code Requirements for Concrete Masonry (ACI-ASCE 530 Building Code
for Masonry; ACI-ASCE 530.1 Masonry Specifications)

NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA)

NATIONAL ELECTRICAL SAFETY CODE (NESC)

NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA)

National Fire Codes (NFC) Current as of 2001

NATIONAL FOREST PRODUCTS ASSOCIATION (NFPA)

NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION

OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)

29 CFR Occupational Safety and Health Standards Part 1910

10 CFR 435B Energy Conservation Performance Standards

29 CFR 1926 Safety and Health Regulations for Construction

40 CFR 61 National Emission Standards for Hazardous Air Pollutants

40 CFR 260 Hazardous Waste Management System General

40 CFR 261 Identification and Listing of Hazardous Waste

SAVANNAH DISTRICT DESIGN MANUAL

Design Manual for Military Construction, June 2000

SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA)

STEEL DECK INSTITUTE (SDI)

STEEL DECK INSTITUTE DIAPHRAGM DESIGN MANUAL (Latest Edition)

STEEL JOIST INSTITUTE

STANDARD PLUMBING CODE (SBCC)

Standard Specification for Load Table for Open Web Joists (latest edition)

UNDERWRITERS LABORATORIES STANDARDS (UL)

UNIFORM FEDERAL ACCESSIBILITY STANDARD (UFAS)

UNIFORM MECHANICAL CODE (UMC)

STATE REGULATIONS

Manual for Erosion and Sediment Control in South Carolina (latest-edition)

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

BHMA A156.1 (1997) Butts and Hinges

BHMA A156.10 (1991) Power Operated Pedestrian Doors

BHMA A156.11 (1991) Cabinet Locks

BHMA A156.12 (1992) Interconnected Locks/Latches

BHMA A156.13 (1994) Mortise Locks & Latches

BHMA A156.14 (1997) Sliding and Folding Door Hardware

BHMA A156.15 (1995) Life Safety Closer/Holder Release Devices

BHMA A156.16 (1997) Auxiliary Hardware

BHMA A156.17 (1993) Self Closing Hinges & Pivots

BHMA A156.18 (1993) Materials and Finishes

BHMA A156.19 (1997) Power Assist and Low Energy Power Operated Doors

BHMA A156.2 (1996) Bored and Preassembled Locks and Latches

BHMA A156.20	(1996) Strap and Tee Hinges and Hasps
BHMA A156.21	(1996) Thresholds
BHMA A156.22	(1996) Door Gasketing Systems
BHMA A156.23	(1992) Electromagnetic Locks
BHMA A156.24	(1992) Delayed Egress Locks
BHMA A156.3	(1994) Exit Devices
BHMA A156.4	(1992) Door Controls - Closers
BHMA A156.5	(1992) Auxiliary Locks & Associated Products
BHMA A156.6	(1994) Architectural Door Trim
BHMA A156.7	(1997) Template Hinge Dimensions
BHMA A156.8	(1994) Door Controls - Overhead Stops and Holders
BHMA A156.9	(1994) Cabinet Hardware
BHMA Closer Directory	(Effective thru Jul (1999) Directory of Certified Door Closers
BHMA Exit Devices Directory	(Effective thru Aug 1998) Directory of Certified Exit Devices
BHMA L & R Directory	(Effective thru Jun 1999) Directory of Certified Locks & Latches
BHMA Directory	(Effective thru Sep 1999) Directory of Electromagnetic & Delayed Egress Locks

APPENDIX B

FUNCTIONAL ROOM REQUIREMENTS

APPENDIX B**FUNCTIONAL ROOM REQUIREMENTS**

This room by room summary of specific user requirements for function within the facilities represents the minimum quantity and quality of user desired features and functional relationships. Where there is a conflict between the functional room requirements and applicable building codes, standards and installation design guidelines, the most stringent condition shall apply.

CHAPEL FUNCTIONS**SPACE: VESTIBULE 1**

DESCRIPTION: Main building entry vestibule.

AREA: 148 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Exterior entry and Reception.

FEATURES: Exterior sidelights, building directory, fire alarm panel.

SPACE: RECEPTION

DESCRIPTION: Main building corridor. Provide space for furnishings as determined through interior design development.

AREA: 508 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Vestibule 1, Corridor 1

FEATURES: Enclosed bulletin boards.

SPACE: CORRIDOR 1

DESCRIPTION: Main building corridor.

AREA: 796 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Reception,

FEATURES:

SPACE: CORRIDOR 2

DESCRIPTION: Main building corridor.

AREA: 483 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS:

FEATURES:

SPACE: CORRIDOR 3

DESCRIPTION: Main building corridor.

AREA: 798 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Lobby

FEATURES:

SPACE: LOBBY

DESCRIPTION: Main building corridor.

AREA: 299 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Vestibule 2, Corridor 3

FEATURES:

SPACE: VESTIBULE 2**DESCRIPTION:** Building entry vestibule.**AREA:** 83 SF**NUMBER OF OCCUPANTS:** 0**ADJACENCY REQUIREMENTS:** Exterior entry and Lobby.**FEATURES:** Exterior sidelights, building directory, fire alarm panel (alternate location)**SPACE: MEN'S RESTROOM****DESCRIPTION:** Multi-occupant handicapped-accessible men's toilet.**AREA:** 202 SF**NUMBER OF OCCUPANTS:** Based on serving 599 male visitors**ADJACENCY REQUIREMENTS:** Located near entrance for convenient use by facility personnel and visitors, near lobby and drinking fountains.**FEATURES:** Sound control. 3 Toilets and 3 lavatories. Two-roll toilet tissue dispensers, grab bars, soap dispensers, framed mirror at lavatory, paper towel dispensers and wall-mounted waste receptacle. Toilet partitions. Floor drains. Diaper changing station.**SPACE: WOMEN'S RESTROOM****DESCRIPTION:** Multi-occupant handicapped-accessible women's toilet.**AREA:** 202 SF**NUMBER OF OCCUPANTS:** Based on serving 599 female visitors**ADJACENCY REQUIREMENTS:** Located near entrance for convenient use by facility personnel and visitors, near lobby and drinking fountains.**FEATURES:** Sound control. 3 Toilets and 3 lavatories. Two-roll toilet tissue dispensers, grab bars, sanitary napkin disposals, soap dispensers, framed mirror at lavatory, paper towel dispensers and wall-mounted waste receptacle. Toilet partitions. Floor drains. Diaper changing station.**SPACE: MEN'S RESTROOM****DESCRIPTION:** Multi-occupant handicapped-accessible men's toilet.**AREA:** 158 SF**NUMBER OF OCCUPANTS:** Based on serving 30 male personnel**ADJACENCY REQUIREMENTS:** Located near waiting area for convenient use by facility personnel and visitors.**FEATURES:** Sound control. 1 Toilets, 1 urinal and 2 lavatories. Two-roll toilet tissue dispensers, grab bars, soap dispensers, framed mirror at lavatory, paper towel dispensers and wall-mounted waste receptacle. Floor drains. Diaper changing station.**SPACE: WOMEN'S RESTROOM****DESCRIPTION:** Multi-occupant handicapped-accessible women's toilet.**AREA:** 159 SF**NUMBER OF OCCUPANTS:** Based on serving 30 female personnel**ADJACENCY REQUIREMENTS:** Located near waiting area for convenient use by facility personnel and visitors.**FEATURES:** Sound control. 2 Toilets and 2 lavatories. Two-roll toilet tissue dispensers, grab bars, sanitary napkin disposals, soap dispensers, framed mirror at lavatory, paper towel dispensers and wall-mounted waste receptacle. Floor drains. Diaper changing station.**SPACE: WORSHIP CENTER****DESCRIPTION:** Main Sanctuary space and raised platform for choir seating and religious service. Provide space for furnishings as determined through interior design development. .

AREA: 4,780 SF

NUMBER OF OCCUPANTS: Fixed seating (pews) with kneelers for 403. Space for 40 seats at Choir seating.

ADJACENCY REQUIREMENTS: Located adjacent to Activity Center, Raised platform and Baptistry Suite.

FEATURES: Sound control (52 STC). Separated from Activity Center by accordion partition (STC 44). Wood trim and paneling. Moveable pulpit, alter, choir and platform seats/ Removable Communion rails. Separate motorized curtains to conceal religious icons, choir seats and baptismal pool. Reversible cross/crucifix above alter with electric operator. Stations of the Cross designed to have closable doors to blend into the wood trim design. Wall and ceiling treatments to control reverberation and to optimize acoustics. Flexible audio system. Grand piano, and organ. Organ speakers shall be concealed above the Baptistry. 2 projectors and 2 electrically operated screens. Two areas in the first choir riser are removable for wheelchair space. Low partition to separate audio visual control panel area. Provide conduits w/ pull cords to equipment controls.

SPACE: CRYING ROOM

DESCRIPTION: Space for crying children and their parents. Provide space for furnishings as determined through interior design development..

AREA: 81 SF

NUMBER OF OCCUPANTS: 6

ADJACENCY REQUIREMENTS: Main corridor and worship Center.

FEATURES: Sound control (52 STC).

SPACE: STORAGE (WORSHIP CENTER)

DESCRIPTION: Storage closet

AREA: 60 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Opens to Worship Center.

FEATURES:

SPACE: ACTIVITY CENTER

DESCRIPTION: Multi-purpose space allowing expanded seating for the Worship Center and as a stand alone Activity area. Provide space for furnishings as determined through interior design development. .

AREA: 2,168 SF

NUMBER OF OCCUPANTS: Seating area for 210 moveable chairs

ADJACENCY REQUIREMENTS: Located between Worship Center and Raised Platform. Adjacent to Kitchen with doors to accommodate food line.

FEATURES: Sound control (52 STC). Separated from Worship Center by accordion partition (STC 44). Dimmable stage lighting. Detailing and colors compatible with Main Worship Center Wall and ceiling treatments to control reverberation and to optimize acoustics. Flexible audio system. Provisions and space for 2 projectors and 2 video screens.

SPACE: RAISED PLATFORM

DESCRIPTION: Raised platform for performances and storage below for folding chairs and tables on dollies.

AREA: 382 SF

NUMBER OF OCCUPANTS: 26

ADJACENCY REQUIREMENTS: Located at end of Activity Center.

FEATURES: Sound control (52 STC). Detailing and colors compatible with Activity Center. Dimmable stage lighting. Flexible audio system.

Doors to conceal storage below. Projector and electrically operated screens.

SPACE: STORAGE (GENERAL)

DESCRIPTION: Storage closet

AREA: 149 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Opens to Main Corridors and Activity Center.

FEATURES: Access control.

SPACE: STORAGE (GENERAL)

DESCRIPTION: Storage closet

AREA: 152 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Opens to Main Corridors and Activity Center.

FEATURES: Access control.

SPACE: MULTI-PURPOSE ROOM 1

DESCRIPTION: Multi-purpose space intended for worship, educational purposes and meeting. Provide space for furnishings as determined through interior design development. .

AREA: 701 SF

NUMBER OF OCCUPANTS: 100

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (52 STC). Built-in wall and base cabinets, work counters and sink.

SPACE: MULTI-PURPOSE ROOM 2

DESCRIPTION: Multi-purpose space intended for worship, educational purposes and meeting. Provide space for furnishings as determined through interior design development. .

AREA: 700 SF

NUMBER OF OCCUPANTS: 100

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (52 STC). Built-in wall and base cabinets, work counters and sink.

SPACE: CLASSROOM 1/ BLESSED SACRAMENT

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 230 SF

NUMBER OF OCCUPANTS: 16

ADJACENCY REQUIREMENTS: Main corridor and opens to Classroom 2

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

SPACE: CLASSROOM 2

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 230 SF

NUMBER OF OCCUPANTS: 16

ADJACENCY REQUIREMENTS: Main corridor and opens to Classroom 1

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

SPACE: RESTROOM

DESCRIPTION: Single-occupant toilet.

AREA: 50 SF

NUMBER OF OCCUPANTS: Based on serving 16 visitors

ADJACENCY REQUIREMENTS: Opens to Classroom 2.

FEATURES: Sound control (STC 45). 1 Toilet and 1 lavatory. Two-roll toilet tissue dispenser, sanitary napkin disposal, soap dispenser, framed mirror at lavatory, paper towel dispenser and wall-mounted waste receptacle.

SPACE: CLASSROOM 3/STORAGE

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 137 SF

NUMBER OF OCCUPANTS: 10

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC).

SPACE: CLASSROOM 4

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 262 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor and opens to Nursery.

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

Built-in wall and base cabinets, work counters and sink.

SPACE: CLASSROOM 5/CHOIR

DESCRIPTION: Space for educational purposes and Choir music practice. Provide space for furnishings as determined through interior design development. .

AREA: 263 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor and opens to Classroom 6

FEATURES: Sound control (52 STC). Accordion partition (44 STC).

SPACE: CHOIR ROBES/MUSIC

DESCRIPTION: Space for Choir music and robe storage.

AREA: 263 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Opens to Choir Room

FEATURES: Sound control (45 STC). Closet rod and shelving for hanging robe storage and music storage.

SPACE: CLASSROOM 6

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 209 SF

NUMBER OF OCCUPANTS: 14

ADJACENCY REQUIREMENTS: Main corridor and opens to Classroom 5

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

SPACE: CLASSROOM 7

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 166 SF

NUMBER OF OCCUPANTS: 12

ADJACENCY REQUIREMENTS: Main corridor and opens to Classroom 8

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

SPACE: CLASSROOM 8

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 161 SF

NUMBER OF OCCUPANTS: 12

ADJACENCY REQUIREMENTS: Main corridor and opens to Classrooms 7 and 9

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

SPACE: CLASSROOM 9

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 166 SF

NUMBER OF OCCUPANTS: 12

ADJACENCY REQUIREMENTS: Main corridor and opens to Classroom 8

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

SPACE: CLASSROOM 10

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 212 SF

NUMBER OF OCCUPANTS: 15

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC).

SPACE: CLASSROOM 11

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 157 SF

NUMBER OF OCCUPANTS: 11

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC).

SPACE: CLASSROOM 12

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 179 SF

NUMBER OF OCCUPANTS: 12

ADJACENCY REQUIREMENTS: Main corridor and opens to Classroom 13

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

SPACE: CLASSROOM 13

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 181 SF

NUMBER OF OCCUPANTS: 12

ADJACENCY REQUIREMENTS: Main corridor and opens to Classroom 12

FEATURES: Sound control (45 STC). Accordion partition (44 STC).

SPACE: NURSERY

DESCRIPTION: Space for watching children during services. Provide space for furnishings as determined through interior design development. **AREA:** 350 SF

NUMBER OF OCCUPANTS: 23

ADJACENCY REQUIREMENTS: Main corridor and Crying Room. Opens to Classroom 4. Direct egress to exterior. Direct access to Children's Rest Room.

FEATURES: Sound control (52 STC). Accordion partition (44 STC). Built-in wall and base cabinets, work counters/changing table, sink. Exit hardware mounted above height of reach of children. Electrical outlets at 54" AFF, except no outlets are permitted next to cribs. Outlets are childproofed.

SPACE: CHILD'S REST ROOM

DESCRIPTION: Single-occupant children's toilet

AREA: 31 SF

NUMBER OF OCCUPANTS: Based on serving 13 visitors

ADJACENCY REQUIREMENTS: Direct access to Nursery.

FEATURES: 1 Toilet and 1 lavatory sized and mounted to accommodate a young child's use. Two-roll toilet tissue dispenser, soap dispenser, framed mirror at lavatory, paper towel dispenser and wall-mounted waste receptacle. Toilet partition separation is low enough to allow adult supervision. Door can be unlocked from the outside.

SPACE: RESOURCE CENTER

DESCRIPTION: Space for storage of materials and assembly of printed materials.

AREA: 226 SF

NUMBER OF OCCUPANTS: 3

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Built-in wall and base cabinets, work counters. Storage

SPACE: KITCHEN

DESCRIPTION: Warming kitchen space for the storage and assembly of food.

AREA: 392 SF

NUMBER OF OCCUPANTS: 4

ADJACENCY REQUIREMENTS: Main corridor and Activity Center. With pass through access for food line.

FEATURES: Built-in commercial grade, stainless steel work counters and integral multi-compartment sinks. Commercial kitchen equipment including stainless steel refrigerators (2), oven, dishwashers (2) and ice maker. Exhaust hood with fire suppression system.

SPACE: PANTRY 1

DESCRIPTION: Pantry space for the storage for non-perishable food items.

AREA: 49 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Opens to Kitchen.

FEATURES: Built-in wall and base cabinets, work counters, stainless steel stub out utilities for future sink. (future Kosher/Muslim kitchen function). Access control.

SPACE: PANTRY 2

DESCRIPTION: Pantry space for the storage for non-perishable food items.

AREA: 60 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Opens to Kitchen.

FEATURES: Built-in wall and base cabinets, work counters, stainless steel stub out utilities for future sink. (future Kosher/Muslim kitchen function). Access control.

SPACE: BAPTISTRY SUITE

DESCRIPTION: Space for access to baptismal pool. 2 dressing rooms and staging area.

AREA: 336 SF

NUMBER OF OCCUPANTS: 4

ADJACENCY REQUIREMENTS: Behind Choir seating in Worship Center.

FEATURES: Manufacturer standard baptismal pool and cover. Stage lighting for pool. Motorized curtains at front of pool. Wall behind pool prepped for mural. Ramps and stairs to access pool. Floor drains. Clothing storage and towel storage. Wall mounted bench. Non-slip water resistant floor finish. A cross which can be rotated to turn into a crucifix. GFI receptacles for hair dryers.

SPACE: AUDIO EQUIPMENT ROOM

DESCRIPTION: Space for sound equipment and controls for the building.

AREA: 58 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Behind Choir seating in Worship Center.

FEATURES: .

SPACE: MEDIATION/RECONCILIATION

DESCRIPTION: Space for counseling congregation.

AREA: 81 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Main corridor. Opens to Blessed Sacrament Room.

FEATURES: Sound control (52 STC).

SPACE: SACRISTY/ROBING

DESCRIPTION: Space for clergy to robe.

AREA: 163 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Near Worship Center.

FEATURES: Built-in wall and base cabinets, work counters and double sink. Base cabinets shall be lockable Full length mirror.

SPACE: SACRISTY STORAGE

DESCRIPTION: Storage of sacred vessels

AREA: 104 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Opens to Sacristy/Robing.

FEATURES: Built-in work counters shelving. Access control.

SPACE: SACRISTY STORAGE

DESCRIPTION: Storage of vestments

AREA: 42 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Opens to Sacristy/Robing.

FEATURES: Built-in rod and shelf for hanging robe storage. Access control.

SPACE: RESTROOM

DESCRIPTION: Single-occupant handicapped accessible toilet.

AREA: 66 SF

NUMBER OF OCCUPANTS: Based on serving 15 visitors and staff

ADJACENCY REQUIREMENTS: Near Sacristy/Robing.

FEATURES: Sound control (STC 45). 1 Toilet, 1 lavatory and 1 tub/shower. Two-roll toilet tissue dispenser, sanitary napkin

disposal, soap dispenser, framed mirror at lavatory, paper towel dispenser and wall-mounted waste receptacle and grab bars at water closet and tub.

SPACE: GROUP OFFICE

DESCRIPTION: Open office area for 2 administration desks. Space to keep files and miscellaneous storage and waiting area furnishings as determined through interior design development.

AREA: 215 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Opens to Chaplain's offices (3 and 4), Senior assistant's office and storage closet.

FEATURES: Interior windows to Reception Area. Pedestal and wall fed Systems furniture configuration and storage requirements as determined through comprehensive interior design development. Photocopier and fax.

SPACE: GROUP OFFICE STORAGE

DESCRIPTION: Storage Closet Provide space for shelving.

AREA: 35 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Opens to Group Office.

FEATURES: .

SPACE: CHAPLAIN'S OFFICE 1

DESCRIPTION: Office area for 1 workstation. Space to keep files and miscellaneous storage and furnishings as determined through interior design development.

AREA: 183 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Near Reception Area.

FEATURES: Sound control (52 STC). Partitions shall extend to underside of roof deck. Vision glass panels in door or sidelight shall be installed to Reception Area. Pedestal and wall fed Systems furniture configuration and storage requirements as determined through comprehensive interior design development. Provide voice and LAN outlets at workstation.

SPACE: CHAPLAIN'S OFFICE 2

DESCRIPTION: Office area for 1 workstation. Space to keep files and miscellaneous storage and furnishings as determined through interior design development.

AREA: 180 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Near Reception Area.

FEATURES: Sound control (52 STC). Partitions shall extend to underside of roof deck. Vision glass panels in door or sidelight shall be installed to Reception Area. Interior window to vestibule. Pedestal and wall fed Systems furniture configuration and storage requirements as determined through comprehensive interior design development. Provide voice and LAN outlets at workstation.

SPACE: CHAPLAIN'S OFFICE 3

DESCRIPTION: Office area for 1 workstation. Space to keep files and miscellaneous storage and furnishings as determined through interior design development.

AREA: 112 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Opens to Group Office.

FEATURES: Sound control (52 STC). Partitions shall extend to underside of roof deck. Vision glass panels in door or sidelight shall be installed to Group Office. Pedestal and wall fed Systems furniture configuration and storage requirements as determined through comprehensive interior design development. Provide voice and LAN outlets at workstation.

SPACE: CHAPLAIN'S OFFICE 4

DESCRIPTION: Office area for 1 workstation. Space to keep files and miscellaneous storage and furnishings as determined through interior design development.

AREA: 114 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Opens to Group Office.

FEATURES: Sound control (52 STC). Partitions shall extend to underside of roof deck. Vision glass panels in door or sidelight shall be installed to Group Office. Pedestal and wall fed Systems furniture configuration and storage requirements as determined through comprehensive interior design development. Provide voice and LAN outlets at workstation.

DATA/VOICE/CATV REQUIREMENTS: 1 data and 1 voice

SPACE: SENIOR ASSISTANT'S OFFICE

DESCRIPTION: Office area for 1 workstation. Space to keep files and miscellaneous storage and furnishings as determined through interior design development.

AREA: 108 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Opens to Group Office.

FEATURES: Interior windows to Group Office and vestibule. Pedestal and wall fed Systems furniture configuration and storage requirements as determined through comprehensive interior design development. Provide voice and LAN outlets at workstation.

DATA/VOICE/CATV REQUIREMENTS: 1 data and 1 voice

SPACE: EDUCATION DIRECTOR'S OFFICE

DESCRIPTION: Office area for 1 workstation. Space to keep files and miscellaneous storage and furnishings as determined through interior design development.

AREA: 122 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Near Resource Center.

FEATURES: Pedestal and wall fed Systems furniture configuration and storage requirements as determined through comprehensive interior design development. Provide voice and LAN outlets at workstation.

DATA/VOICE/CATV REQUIREMENTS: 1 data and 1 voice

SPACE: WAITING ROOM

DESCRIPTION: Space for furnishings as determined through interior design development.

AREA: 156 SF

NUMBER OF OCCUPANTS: 10

ADJACENCY REQUIREMENTS: Near Worship Center.

FEATURES: .

SPACE: JANITOR'S CLOSET

DESCRIPTION: Room for housekeeping equipment and supplies.

AREA: 30 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Main Corridor near public toilets.

FEATURES: Floor sink with splash guard, stainless steel mop holder and shelf. Hot and cold water outlet with hose bib.

SPACE: MECHANICAL ROOM

DESCRIPTION: Room for domestic water, fire water and natural gas service entrances and mechanical equipment.

AREA: 370 SF

NUMBER OF OCCUPANTS: 2

ADJACENCY REQUIREMENTS: Direct access from exterior, adequate exterior wall for required louvers.

FEATURES: Double leaf door with access to exterior, access control. Floor drain. Sound control and sound isolation for equipment.

SPACE: HVAC MEZZANINE

DESCRIPTION: Room for air handling equipment.

AREA: 1,951 SF

NUMBER OF OCCUPANTS: 7

ADJACENCY REQUIREMENTS: Direct access from exterior via stairway, adequate exterior wall for required louvers.

FEATURES: Sound control and sound isolation for equipment. 45 STC
This area to be keyed separately from other utility rooms so that room can be accessed by staff for routine maintenance.

SPACE: MAIN ELECTRICAL ROOM

DESCRIPTION: Location of main panels and transformers. Service entrance for power and communication.

AREA: 143 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Accessible to maintenance personnel from exterior.

FEATURES: Access control. Plywood backer board(s). Sound control. Door with direct access to exterior.

SPACE: COMMUNICATION ROOM

DESCRIPTION: Room for telephone panel(s), NIPR switches/network servers and related equipment.

AREA: 134 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Accessible to maintenance personnel from Activity Center

FEATURES: Access control. Plywood backer board(s). Sound control. Telephone terminal board(s), patch panel(s), NIPR switches and related equipment.

SPACE: ELECTRICAL ROOM

DESCRIPTION: Location of sub panels and transformers feeding near Worship Center. Room for telephone panel(s), NIPR and SIPR switches/network servers and related equipment.

AREA: 80 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Accessible to maintenance personnel from Baptistry Suite

FEATURES: Access control. Plywood backer board(s).

EDUCATION FACILITY FUNCTIONS

SPACE: FELLOWSHIP HALL

DESCRIPTION: Existing spaces expanded by removal of partition, rework of ceiling grid and replacement of all ceiling tiles, repair and patch wall and floor finishes where partition was removed.

AREA: SF

NUMBER OF OCCUPANTS: N/A

ADJACENCY REQUIREMENTS:

FEATURES: .

SPACE: KITCHEN

DESCRIPTION: Warming kitchen space for the storage and assembly of food.

AREA: 382 SF

NUMBER OF OCCUPANTS: 4

ADJACENCY REQUIREMENTS: Main corridor nearest Annex.

FEATURES: Built-in commercial grade, stainless steel work counters and integral sinks. Kitchen equipment including stainless steel refrigerators and freezers, range top, dishwashers and ice maker. Door with pivot hinges to allow swing in both directions.

SPACE: INFANT ROOM

DESCRIPTION: Space for watching of infants during service. Provide space for furnishings as determined through interior design development. **AREA:** 242 SF

NUMBER OF OCCUPANTS: 12

ADJACENCY REQUIREMENTS: Main corridor near Annex. Direct egress to exterior. Direct access to Children's Toilet.

FEATURES: Sound control (52 STC). Visual pager system from Infant Room to Sanctuary. Electrical outlets at 54" AFF, except no outlets are permitted next to cribs. Outlets are childproofed.

SPACE: CHILD'S TOILET

DESCRIPTION: Single-occupant [handicapped accessible](#) children's toilet

AREA: 61 SF

NUMBER OF OCCUPANTS: Based on serving 22 visitors

ADJACENCY REQUIREMENTS: Direct access to Infant and Toddler Rooms.

FEATURES: 1 Toilet and 1 lavatory sized and mounted to accommodate a young child's use. [Grab bars at water closet](#). Two-roll toilet tissue dispenser, soap dispenser, framed mirror at lavatory, paper towel dispenser and wall-mounted waste receptacle. Doors can be unlocked from the outside.

SPACE: PANTRY

DESCRIPTION: Pantry space for the storage for non-perishable food items and supplies.

AREA: 65 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Between Infant and Toddler Rooms.

FEATURES: Built-in wall and base cabinets, work counters. Electrical outlets at 54" AFF, except no outlets are permitted next to cribs. Outlets are childproofed.

SPACE: TODDLER ROOM

DESCRIPTION: Space for watching of toddlers during service. Provide space for furnishings as determined through interior design development. **AREA:** 321 SF

NUMBER OF OCCUPANTS: 22

ADJACENCY REQUIREMENTS: Main corridor near Annex. Direct egress to exterior. Direct access to Children's Toilet.

FEATURES: Sound control (52 STC). Visual pager system from Toddler Room to Sanctuary. Exit hardware mounted above height of reach of children. Electrical outlets at 54" AFF, except no outlets are permitted next to cribs. Outlets are childproofed.

SPACE: CLASSROOM 1

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 268 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 2

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 267 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 3

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 268 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 4

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 264 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Accordion partition (44 STC) shared with Classroom 6. Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 5

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 268 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 6

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 268 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Accordion partition (44 STC) shared with Classroom 4. Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 7

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 268 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 8

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 268 SF

NUMBER OF OCCUPANTS: 18

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Accordion partition (44 STC) shared with Classroom 10. Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 9

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 292 SF

NUMBER OF OCCUPANTS: 20

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 10

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 292 SF

NUMBER OF OCCUPANTS: 20

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Accordion partition (44 STC) shared with Classroom 8. Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 11

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 479 SF

NUMBER OF OCCUPANTS: 32

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Built-in wall and base cabinets and work counters.

SPACE: CLASSROOM 12

DESCRIPTION: Space for educational purposes. Provide space for furnishings as determined through interior design development.

AREA: 479 SF

NUMBER OF OCCUPANTS: 32

ADJACENCY REQUIREMENTS: Main corridor

FEATURES: Sound control (45 STC). Built-in wall and base cabinets and work counters.

SPACE: MEN'S RESTROOM

DESCRIPTION: Multi-occupant handicapped-accessible men's toilet.

AREA: 225 SF

NUMBER OF OCCUPANTS: Based on serving 157 male visitors and staff

ADJACENCY REQUIREMENTS: Located near entrance for convenient use by facility personnel and visitors, near public entrance and drinking fountains.

FEATURES: Sound control (52 STC). 2 Toilets, 2 Urinals and 2 lavatories. Two-roll toilet tissue dispensers, grab bars, soap dispensers, framed mirror at lavatory, paper towel dispensers and wall-mounted waste receptacle. Toilet partitions. Countertop. Electric hand dryer. Diaper changing station.

SPACE: WOMEN'S RESTROOM

DESCRIPTION: Multi-occupant handicapped-accessible women's toilet.

AREA: 221 SF

NUMBER OF OCCUPANTS: Based on serving 157 female visitors and staff

ADJACENCY REQUIREMENTS: Located near entrance for convenient use by facility personnel and visitors, near public entrance and drinking fountains.

FEATURES: Sound control (52 STC). 3 Toilets and 2 lavatories. Two-roll toilet tissue dispensers, grab bars, sanitary napkin disposals, soap dispensers, framed mirror at lavatory, paper towel dispensers and wall-mounted waste receptacle. Toilet partitions. Countertop. Electric hand dryer. Diaper changing station.

SPACE: JANITOR'S CLOSET

DESCRIPTION: Room for housekeeping equipment and supplies.

AREA: 23 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Main Corridor near public toilets.

FEATURES: Floor sink with splash guard, stainless steel mop holder and shelf. Hot and cold water outlet with hose bib.

SPACE: STORAGE (GENERAL)

DESCRIPTION: Storage closet

AREA: 54 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Opens to Main Corridor.

FEATURES: Access control.

SPACE: MECHANICAL ROOM

DESCRIPTION: Room for domestic water, fire water and natural gas service entrances and mechanical equipment.

AREA: 186 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Direct access from exterior, adequate exterior wall for required louvers.

FEATURES: Double leaf door with access to exterior, access control. Floor drain. Sound control

SPACE: ELECTRICAL ROOM

DESCRIPTION: Location of main panels and transformers. Service entrance for power and communication.

AREA: 75 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Accessible to maintenance personnel from main corridor.

FEATURES: Access control. Plywood backer board(s). Sound control. Electrical panels, transformers and related equipment.

SPACE: TELECOM ROOM

DESCRIPTION: Room for telephone panel(s), NIPR switches/network servers and related equipment.

AREA: 68 SF

NUMBER OF OCCUPANTS: 1

ADJACENCY REQUIREMENTS: Accessible to maintenance personnel from main corridor.

FEATURES: Access control. Plywood backer board(s). Sound control. Telephone terminal board(s), patch panel(s), NIPR switches and related equipment.

SPACE: VESTIBULE 1

DESCRIPTION: Main building entry vestibule.

AREA: 55 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Exterior entry and main corridor.

FEATURES: Exterior sidelights, building directory, fire alarm panel.

SPACE: VESTIBULE 2

DESCRIPTION: Building entry vestibule.

AREA: 55 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Exterior entry and main corridor.

FEATURES: Exterior sidelights, fire alarm panel (alternate location)

SPACE: VESTIBULE 3

DESCRIPTION: Building entry vestibule.

AREA: 54 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS: Exterior entry and main corridor.

FEATURES: Exterior sidelights.

SPACE: MAIN CORRIDOR

DESCRIPTION: Main building corridor.

AREA: 1,534 SF

NUMBER OF OCCUPANTS: 0

ADJACENCY REQUIREMENTS:

FEATURES:

END OF FUNCTIONAL ROOM REQUIREMENTS

APPENDIX C
FIRE PROTECTION / LIFE SAFETY CODE
ANALYSIS

APPENDIX C
FIRE PROTECTION/LIFE SAFETY CODE ANALYSIS

NOTE TO DESIGNER: This document is a preliminary analysis used for concept development. It does not contain all requirements and does not relieve the designer of complete code and criteria review, compliance and documentation responsibilities during proposal preparation and final design development.

REFERENCES:

Military Handbook MIL HDBK 1008c, Fire Protection for Facilities Engineering, Design and Construction, 10 June 1997
Engineering Circular EC 1110-1-92, Classification of Type of Construction, 21 June 2000
International Building Code(IBC) 2000 as modified by UFC 1-200-01
NFPA 101, Life Safety Code, 2000
NFPA 10, Standard for Portable Fire Extinguishers, 1998

BUILDING DESCRIPTION:

Chapel -One-Story Building with mezzanine for mechanical equipment,
Approximately 24,742 Square Feet
Education Facility -One-Story Building, Approximately 8,462 Square Feet

AUTOMATIC SPRINKLER SYSTEM: Fully Sprinklered for both buildings.

IBC OCCUPANCY:

Chapel - Assembly Group A-3 (Section 303)
Education Facility - Education Group E (Section 305)
Note: Care for infants and toddlers is considered an accessory use area by meeting the criteria set by 302.2.

NFPA 101 OCCUPANCY:

Chapel - Assembly (Chapter 12)
Education Facility - Education (Chapter 14)

CONSTRUCTION TYPE (IBC Table 503): Type IIB unrated is set as a minimum, although a lesser construction type may be permitted by Code. Construction may be of any materials allowed by IBC, nonrated, noncombustible per IBC Table 601.

ALLOWABLE AREAS (IBC Table 503):

Chapel - Type IIB, Assembly (A-3)
References: Table 503 - 9,500 SF per floor max and 2 story, 55' max.
506.1 - 45,125 SF allowable area (9,500 x (1 + .75 + 3))
506.2 - allows 75% increase for frontage
506.3 - allows 300% for 1 story fully sprinklered building

Education Facility - Type IIB, Education (E) with 1 hour rated exterior wall (Table 705.4) between new facility and existing Annex where breezeway is constructed.

References: Table 503 - 14,500 SF per floor max and 2 story, 55' max.
506.1 - 67,236 SF allowable area (14,500 x (1 + .637 + 3))
506.2 - allows 63.7% increase for frontage
506.3 - allows 300% for 1 story fully sprinklered building

EXTERIOR WALL AND OPENING PROTECTION (IBC Table 602 and 704.8):

Where fire separation is greater than or equal to 30', the required fire resistance rating for the exterior wall is 0 hours. Where the breezeway attaches to the existing Annex and the new Education Facility, the required rating is 1 hour per Table 602.

Unlimited area of unprotected openings permitted with fire separation distance greater than 30 feet, otherwise as governed by Table 704-8.

FIRE RATED SEPARATIONS:

Mechanical, Generator rooms: One Hour (NFPA 101 8.4.1.1).

Rooms housing boilers over 15 psi and 10 hp - One hour (IBC Table 302.1.1)

Boiler and furnace rooms with total aggregate input rating of greater than or equal to 200,000 BTU and Storage rooms used for storage of combustible supplies in quantities deemed hazardous by the authority having jurisdiction. - One hour or protection with automatic extinguishing systems with partitions able to resist the passage of smoke; doors with self closing devices (NFPA 12.3.2.1.3)

Records, Storage: One Hour (MIL HDBK 1008c 4.10.5).

ATTIC DRAFT STOPS (MIL HDBK 1008c 2.2.1):

Unsprinklered attic spaces at combustible roof construction: Draft stops of gypsum board on wood or metal framing required to divide space into areas not exceeding 3,000 square feet.

DESIGN OCCUPANT LOAD (NFPA 101, Table 7.1.3.2, IBC Table 1003.2.2.2):

Gross floor area excludes exterior walls and overhangs. Net Floor area excludes unoccupied accessory areas. Unoccupied areas include walls, overhangs and normally unoccupied space.

Chapel -

Occupancy	Area	Area/Occupant	Occupants
Worship bench seating	7,242 lf	1/18 lin. in	403
Activity Center	2,168	7 sf net	309
Multi-purpose Room	701	7 sf net	100
Multi-purpose Room	701	7 sf net	100
Education	4,280	15 sf net	285
Business	7,442	100 sf gross	75
Unoccupied areas	5,651	N/A	0
Total			1,272

Education Facility -

Occupancy	Area	Area/Occupant	Occupants
Education	4,308	15 sf net	287
Business	2,586	100 sf gross	26
Unoccupied areas	1,568	N/A	0
Total			313

EGRESS REQUIREMENTS (NFPA 101)

Chapel -

CAPACITY (Table 7.3.3.1): Level Components and Ramps (Min.):

Worship Area	403(0.2) = 80.6 inches
Activity Center	309(0.2) = 61.8 inches
Multi-purpose Room	100(0.2) = 20.0 inches
Education	285(0.2) = 57.0 inches
Business	75(0.2) = 15.0 inches
Total	234.4 inches
Total provided from corridor system	288 inches
Additional directly from spaces	108 inches

Note: Main entrance to Chapel (assembly) must accommodate capacity of half of the total occupant load (636 occupants) or $636(0.2) = 127.2$ inches
(NFPA 101 12.2.3.3)

Education Facility -

CAPACITY (Table 7.3.3.1): Level Components and Ramps (Min.):

Education	287(0.2) = 57.4 inches
Business	26(0.2) = 5.2 inches
Total	62.6 inches
Total provided from corridor system	288 inches

MINIMUM CORRIDOR WIDTH 72 inches used in RFP

Assembly (NFPA 101 12.2.3.5): 44 inches

Education (NFPA 101 12.2.3.5): 72 inches

CORRIDOR CONSTRUCTION

Assembly (NFPA 101 12.3.6) construction of corridor and lobby walls in sprinklered buildings are unrated

Education (NFPA 101 14.3.6): construction of corridor and lobby walls in sprinklered buildings are unrated, provided such walls form smoke partitions

NUMBER OF EXITS (NFPA 101 7.4.1.1, IBC 1005.2.1):

Four required at Chapel (1,273 occ.)

Two required at Education (313 occ.)

MAXIMUM DEAD END

Not permitted (NFPA 101 12.2.5.2) except...

20 feet at Aisles - Assembly (NFPA 101 12.2.5.2)

50 feet at Education and fully sprinklered (NFPA 101 14.2.5.2)

20 feet maximum (IBC 1004.3.2.3)

MAXIMUM COMMON PATH OF TRAVEL

20 feet at Assembly (NFPA 101 12.2.5.1)

100 feet at Education (NFPA 101 14.2.5.3)

75 feet (IBC 1004.2.5)

MAXIMUM TRAVEL DISTANCE (NFPA 101 12.2.6 and 14.2.6, IBC Table 1004.2.4):

200 feet at Assembly and fully sprinklered
200 feet at Education and fully sprinklered

INTERIOR FINISHES:**WALL AND CEILING FINISHES (MIL HDBK 1008c 2.7.1):**

Class A in Exits and Exit Passageways.
Class A, B or C all other areas.
Class A materials shall not exceed FS 25 and SD 50.
Class B materials shall not exceed FS 75 and SD 100.
Class C materials shall not exceed FS 200 and SD 200.
Cellular Plastics not permitted.

FLOOR FINISHES (NFPA 101 12.3.3.5 and 14.3.3.3):

(No requirements).

PORTABLE FIRE EXTINGUISHERS (NFPA 10):

Contractor to provide number and type meeting specifications of Fort Benning Fire Prevention Office.

Maximum travel to fire extinguisher: 75 feet

Multi-purpose fire extinguishers shall be of the following type:

ABC 10 lb Dry Chemical Minimum

4A: 8-B:C Minimum rating

Recessed or semi-recessed fire extinguisher cabinets shall be provided in occupied space. They shall be constructed of metal treated to prevent rust or corrosion. They shall be white in color and not be lockable type. Fire extinguisher shall be provided for each mechanical room, electrical room and communications room and shall be installed within the room as close to the exit as possible.

End of FIRE PROTECTION/LIFE SAFETY CODE ANALYSIS

APPENDIX D

FINISH SCHEDULE

SPACE	FLOOR	BASE	WALLS	CEILING	MIN CLG HT	REMARKS
Vestibule 1	QT/WOM	WD	PGWB/WC	ATC2	14'-0"	
Reception	CPT	WD	PGWB/WC	ATC2	10'-0"	see note 1
Corridor 1	CPT	WD	PGWB/WC	ATC2	10'-0"	see note 1
Corridor 2	CPT	WD	PGWB/WC	ATC2	10'-0"	see note 1
Corridor 3	CPT	WD	PGWB/WC	ATC2	10'-0"	see note 1
Lobby	CPT	WD	PGWB/WC	ATC2	10'-0"	see note 1
Vestibule 2	QT/WOM	WD	PGWB/WC	ATC2	14'-0"	
Men's Restroom	CT	CT	CT/PGWB	ATC1	9'-0"	see notes 2, 4
Women's Restroom	CT	CT	CT/PGWB	ATC1	9'-0"	see notes 2, 4
Men's Restroom	CT	CT	CT/PGWB	ATC1	9'-0"	see notes 2, 4
Women's Restroom	CT	CT	CT/PGWB	ATC1	9'-0"	see notes 2, 4
Worship Center	CPT/WD	WD	see note 5	PGWB	see note 8	see note 7
Storage (Worship Center)	CONC	RB	PGWB	ATC1	10'-0"	
Activity Center	CPT	WD	see note 6	ATC1	see note 8	
Raised Platform	WD	WD	PGWB	ATC1	see note 8	see note 7
Storage (General)	CPT	RB	PGWB	ATC1	10'-0"	
Storage (General)	CPT	RB	PGWB	ATC1	10'-0"	
Multi-Purpose Room 1	CPT	RB	PGWB/WC	ATC1	10'-0"	see note 4
Multi-Purpose Room 2	CPT	RB	PGWB/WC	ATC1	10'-0"	see note 4
Classroom 1/ Blessed Sacrament	CPT	WD	PGWB/WC	PGWB	9'-0"	see notes 1, 9
Classroom 2	CPT	RB	PGWB/WC	ATC1	N/A	
Restroom	CT	CT	CT/PGWB	ATC1	N/A	see note 2
Classroom 3/Storage	CPT	RB	PGWB/WC	ATC1	N/A	
Classroom 4	CPT	RB	PGWB/WC	ATC1	N/A	see note 4
Classroom 5/Choir	CPT	RB	PGWB/WC	ATC1	N/A	
Choir Robes/Music	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 6	CPT	RB	PGWB/WC	ATC1	9'-0"	
Classroom 7	CPT	RB	PGWB/WC	ATC1	9'-0"	
Classroom 8	CPT	RB	PGWB/WC	ATC1	9'-0"	
Classroom 9	CPT	RB	PGWB/WC	ATC1	9'-0"	
Classroom 10	CPT	RB	PGWB/WC	ATC1	9'-0"	
Classroom 11	CPT	RB	PGWB/WC	ATC1	9'-0"	
Classroom 12	CPT	RB	PGWB/WC	ATC1	9'-0"	
Classroom 13	CPT	RB	PGWB/WC	ATC1	9'-0"	

SPACE	FLOOR	BASE	WALLS	CEILING	MIN CLG HT	REMARKS
Nursery	CPT-AM	RB	PGWB/WC	ATC1	9'-0"	see note 4
Child's Rest Room	CT	CT	CT/PGWB	ATC1	9'-0"	see notes 2, 4
Crying Room	CPT-AM	RB	PGWB/WC	ATC1	9'-0"	
Resource Center	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Kitchen	QT	QT	Epoxy	ATC3	9'-0"	see note 3
Pantry 1	QT	QT	Epoxy	ATC3	9'-0"	see notes 3, 4
Pantry 2	QT	QT	Epoxy	ATC3	9'-0"	see notes 3, 4
Baptistry Suite	QT	QT	Epoxy	ATC1	9'-0"	see note 4
Audio Equipment Room	CONC	RB	PGWB	ATC1	9'-0"	
Mediation/Reconciliation	CPT	RB	PGWB	ATC1	9'-0"	see note 1
Sacristy/Robing	CPT	RB	PGWB	ATC1	9'-0"	see note 4
Sacristy Storage	CPT	RB	PGWB	ATC1	9'-0"	see note 4
Sacristy Storage	CPT	RB	PGWB	ATC1	9'-0"	see note 4
Restroom	CT	CT	CT/PGWB	ATC3	9'-0"	see note 2
Group Office	CPT	RB	PGWB/WC	ATC1	9'-0"	
Group Office Storage	CPT	RB	PGWB	ATC1	9'-0"	see note 4
Chaplain's Office 1	CPT	RB	PGWB/WC	ATC1	9'-0"	
Chaplain's Office 2	CPT	RB	PGWB/WC	ATC1	9'-0"	
Chaplain's Office 3	CPT	RB	PGWB/WC	ATC1	9'-0"	
Chaplain's Office 4	CPT	RB	PGWB/WC	ATC1	9'-0"	
Senior Assistant's Office	CPT	RB	PGWB/WC	ATC1	9'-0"	
Education Director's Office	CPT	RB	PGWB/WC	ATC1	9'-0"	
Waiting Room	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 1
Janitor's Closet	CT	CT	CT	ATC1	9'-0"	
Mechanical Room	CONC	---	CMU	EXP STR	N/A	
Hvac Mezzanine	CONC	---	CMU	EXP STR	N/A	
Main Electrical Room	CONC	---	CMU	EXP STR	N/A	
Communication Room	CONC	---	CMU	EXP STR	N/A	
Electrical Room	CONC	---	CMU	EXP STR	N/A	

SPACE	FLOOR	BASE	WALLS	CEILING	MIN CLG HT	REMARKS
Fellowship Hall	P&M	P&M	P&M	ATC1	Existing	
Kitchen	QT	QT	Epoxy	ATC3	9'-0"	see note 3
Infant Room	CPT-AM	RB	PGWB/WC	ATC1	9'-0"	
Child's Toilet	CT	CT	CT/PGWB	ATC1	8'-0"	see notes 2, 4
Pantry	CPT-AM	RB	PGWB/WC	ATC1	9'-0"	see note 4
Toddler Room	CPT-AM	RB	PGWB/WC	ATC1	9'-0"	
Classroom 1	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 2	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 3	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 4	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 5	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 6	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 7	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 8	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 9	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 10	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 11	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Classroom 12	CPT	RB	PGWB/WC	ATC1	9'-0"	see note 4
Men's Restroom	CT	CT	CT/PGWB	ATC1	9'-0"	see notes 2, 4
Women's Restroom	CT	CT	CT/PGWB	ATC1	9'-0"	see notes 2, 4
Janitor's Closet	CONC	---	CMU	EXP STR	N/A	
Storage (General)	CONC	---	CMU	EXP STR	N/A	
Mechanical Room	CONC	---	CMU	EXP STR	N/A	
Electrical Room	CONC	---	CMU	EXP STR	N/A	
Telecom Room	CONC	---	CMU	EXP STR	N/A	
Vestibule 1	QT/WOM	WD	PGWB/WC	ATC2	9'-0"	
Vestibule 2	QT/WOM	WD	PGWB/WC	ATC2	9'-0"	
Vestibule 3	QT/WOM	WD	PGWB/WC	ATC2	9'-0"	
Main Corridor	CPT	WD	PGWB/WC	ATC2	9'-0"	see note 1

LEGEND:	
	<i>Flooring:</i>
CT	Ceramic Floor Tile
CONC	Sealed Concrete
CPT	Carpet or Carpet Tile
CPT-AM	Carpet or Carpet Tile - Antimicrobial at all children's areas
QT	Quarry Tile - non slip
WD	Wood Flooring - stained
WOM	Walk Off Mat - recessed
	<i>Base:</i>
CT	Coved Ceramic Tile Base
QT	Coved Quarry Tile Base
RB	Rubber Base
WD	Wood Base - stained or painted coordinate with wood trim
	<i>Walls:</i>
CMU	Unfinished Concrete Masonry Unit
CMUP	Painted Concrete Masonry Unit
CT	Ceramic Wall Tile - where wainscot is used include bullnose trim cap.
Epoxy	Epoxy Painted Gypsum Wallboard
PGWB	Painted Gypsum Wallboard
WC	Wall Covering - Fabric or Vinyl
WD	Wood Trim - stained or painted coordinate with wood base
	<i>Ceiling:</i>
ATC1	Acoustical Tile Ceiling - typical
ATC2	Acoustical Tile Ceiling - upgraded aesthetic
ATC3	Acoustical Tile Ceiling - moisture resistant
Epoxy	Epoxy Painted Gypsum Wallboard
EXP STR	Exposed to Structure
PGWB	Painted Gypsum Wallboard
	<i>Miscellaneous:</i>
N/A	Not Applicable
---	Not Used
P&M	Patch and Match Existing Adjacent Materials and Finishes

GENERAL NOTES:	
A	Interior walls are typically CMU with an applied finish and/or furred GWB with finish.
B	Where PGWB/WC is indicated, the finish shall be determined through the SID.
C	Where wallcovering is applied over CMU, prepare CMU or fur GWB over the CMU such that the texture of the CMU surface does not transmit through the wallcovering.
D	If PGWB and WC occur on the same surface, GWB shall be furred over CMU for height of wall and WC applied over the GWB substrate.
E	Vinyl wallcovering is not desired.
F	Where ATC ceiling is indicated soffits are acceptable for design enhancement.
G	1" mini blinds and PLAM or painted wood sills shall be provided at all exterior windows, typical.
H	Exterior entrance pads shall have a broom finish. Exposed concrete slabs in interior rooms and slabs to receive resilient tile, carpet and ceramic tile shall have a trowel finish. Exposed concrete slabs shall be sealed.
I	Provide compatible reducers at all changes in floor material. Install reducers under door where door exists. Where no door occurs, install reducer in line with partition until perpendicular partition.
J	Coordinate hardware finishes with base. All hardware finishes shall match. Provide metal thresholds at all exterior doors.
K	Colors, detailing and specific extent shall be determined through SID
KEYED NOTES:	
1	Install chair rail for full extent of room or area.
2	Install 4' high minimum ceramic tile wainscot and cap for all walls within toilet area.
3	Install fiber reinforced gypsum panels with epoxy paint or FRP panels on GWB.
4	Plastic laminate countertops, base cabinets, wall cabinets or shelving as determined through interior design development.
5	Walls in the main worship space shall consist of fabric covered panels with wood base and trim. Stations of the Cross shall be constructed with closable panels designed to work with the fabric panels and trim. Movable partition shall also be constructed to match the fabric and trim.
6	The walls in the Activity Center shall coordinate with the colors and trim in the main worship space.
7	The finish of the raised platform shall be wood with wood trim. The structure can be of any material meeting the requirements of the code. Where folding furnitshings are stored , the strucutre shall be designed to accommodate the storage requirements.
8	The height of the ceiling at the Worship Center, Activity Center and the Raised Platform shall be coordinated. The minimum height at the Activity Center shall be 20' above the main level. The spring line of the vaulted ceiling at the Worship Center shall be 23' minimum above the main level. The apex of the vaulted ceiling shall be a minimum 43' above the main level.
9	Blessed Sacrament Room - Provide dimmable lighting. Provide wood trim and crown moulding. Finishes in this room should complement those of the adjacent Classroom.

APPENDIX E

**SUSTAINABLE PROJECT RATING
TOOL (SPiRiT)**

Sustainable Project Rating Tool (SPiRiT)

Version 1.4

**U. S. Army Corps of Engineers
U. S. Army Assistant Chief of Staff for Installation Management**

April 2001

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NOTES

- 1) This Sustainable Project Rating Tool (SPiRiT) is derived from The U. S. Green Building Council LEED 2.0 (Leadership in Energy and Environmental Design) Green Building Rating System™.
- 2) The SPiRiT numbering scheme parallels, but does not match LEED 2.0. LEED does not number major sections, which it calls 'Credit Categories,' ex. 'Sustainable Sites,' rather it numbers criteria or 'credits' within each major section. SPiRiT credit numbers match those of LEED where there is a 1:1 comparison. Where additional credits have been added they fall at the end of major sections.

- 3) The SPiRiT Credits all follow the format: Intent, Requirement and Technologies/Strategies.

Intent: A statement of the primary goal for the credit;

Requirement: Quantifiable conditions necessary to achieve stated intent;

Technologies/Strategies: Suggested technologies, strategies and referenced guidance on the means to achieve identified requirements.

- 4) Projects are evaluated for each SPiRiT credit which are either 'Prerequisites' or result in a point score:

Prerequisites: These credits are a statement of minimum requirements and must be met. No further points will be awarded unless the minimum is achieved. These credits are recognizable by an 'R' in the number scheme, ex. 1.R1, and a 'Reqd.' in the score column.

Point Score: These credits are evaluated and result in a point score. Where the potential score is greater than 1, no partial points are granted.

- 5) SPiRiT Sustainable Project Certification Levels:

SPiRiT Bronze	25 to 34 Points
SPiRiT Silver	35 to 49 Points
SPiRiT Gold	50 to 74 Points
SPiRiT Platinum	75 to 100 Points

- 6) SPiRiT credits have been developed to address facility life cycle phases including programming, design, construction, and commissioning. Additional rating tools will be developed to address installation/base master planning and facilities operations and maintenance, rehabilitation, recycling, and disposal.

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- 9) Army/USACE employees are members of the USGBC with membership privileges accessible via the USGBC web site, <http://www.usgbc.org>. For information on membership and access to available LEED resources to support use of SPiRiT and sustainable design in your projects, contact Richard Schneider at (217) 373-6752 or richard.l.schneider@erdc.usace.army.mil (Annette Stumpf at (217) 352-6511 ext. 7542 or annette.l.stumpf@erdc.usace.army.mil alternate).

- 10) For the latest information on SPiRiT and for access to guidance, tools and resources supporting sustainable design initiatives, visit the CERL 'Sustainable Design and Development Resource' website, <http://www.cecer.army.mil/SustDesign>. There you may also join the CERL Sustainable Design ListServ to be directly notified of information pertinent to sustainable design.

1.0	Sustainable Sites	Score	20
-----	-------------------	-------	----

1.R1	Erosion, Sedimentation, and Water Quality Control ⁽¹⁾	Reqd.
------	---	-------

Intent: Control erosion and pollutants to reduce negative impacts on water and air quality.

- Requirement:
- ☐ Design a site sediment and erosion control plan and a pollution prevention plan that conforms to best management practices in the EPA's Storm Water Management for Construction Activities, EPA Document No. EPA-833-R-92-001, Chapter 3, OR local Erosion and Sedimentation Control standards and codes, whichever is more stringent. The plan shall meet the following objectives:
 - Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
 - Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter.
 - Prevent hazardous material discharge into storm water systems.
 - Prevent petroleum oils and lubricants (POL) discharge into storm water systems.

Technologies /Strategies: The EPA standard lists numerous measures such as silt fencing, sediment traps, oil grit separators, construction phasing, stabilization of steep slopes, maintaining vegetated ground cover and providing ground cover that will meet this prerequisite.

1.C1	Site Selection ⁽¹⁾
------	--------------------------------------

Intent: Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site. Select site based on functional adjacencies/relationships and land use compatibility.

- | | | |
|--------------|---|---|
| Requirement: | <input type="checkbox"/> Do not develop buildings on portions of sites that meet any one of the following criteria: <ul style="list-style-type: none"> ▪ Prime training or maneuver land. ▪ Land whose elevation is lower than 5 ft. above the 100-year flood elevation as defined by FEMA. ▪ Land that provides habitat for any species on the Federal or State threatened or endangered list. ▪ Within 100 feet of any wetland as defined by 40 CFR, Parts 230-233 and Part 22, OR as defined by local or state rule or law, whichever is more stringent. | 1 |
| | <input type="checkbox"/> Select site based on functional adjacencies/relationships and land use compatibility. <ul style="list-style-type: none"> ▪ Select sites close to existing roads and utilities or use an existing structure to minimize the need for new infrastructure. ▪ Select site in area of high density. ▪ Site facilities based on the strength of their relationships to other facilities/land-uses to limit travel distances. The stronger the relationship/functional interaction, the closer the distance between two facilities. ▪ Select for distance to installation/base transit systems and access to pedestrian ways and bike paths. ▪ Select for development previously used or developed suitable and available sites. | 1 |

Technologies /Strategies: Screen potential building sites for these criteria and/or ensure that these criteria are addressed by the designer during the conceptual design phase. Utilize landscape architects, ecologists, environmental engineers, civil engineers, and similar professionals for the screening process. New wetlands constructed as part of stormwater mitigation or other site restoration efforts are not affected by the restrictions of this prerequisite.

⁽¹⁾ Adapted material not reviewed or endorsed by U. S. Green Building Council.

1.0 Sustainable Sites (Continued)

1.C2 Installation/Base Redevelopment ⁽¹⁾

Intent: Channel development to installation/base cantonment areas with existing infrastructure, protecting greenfields and preserving habitat and natural resources.

- Requirement: ☐ Increase localized density to conform to existing or desired density goals by utilizing sites that are located within existing cantonment areas of high development density. **1**
- ☐ Select sites close to existing roads and utilities or use an existing structure to minimize the need for new infrastructure. **1**

Technologies /Strategies: During the site selection process give preference to previously developed sites with installation/base cantonment redevelopment potential such as facility reduction program cleared sites.

1.C3 Brownfield Redevelopment ⁽¹⁾

Intent: Rehabilitate damaged sites where development is complicated by real or perceived environmental contamination, reducing pressure on undeveloped land.

- Requirement: ☐ Develop on a site classified as a brownfield and provide remediation as required by EPA's Brownfield Redevelopment program requirements OR Develop a brownfield site (a site that has been contaminated by previous uses). **1**

Technologies /Strategies: Screen potential damaged sites for these criteria prior to selection for rehabilitation.
Utilize EPA OSWER Directive 9610.17 and ASTM Standard Practice E1739 for site remediation where required.

1.C4 Alternative Transportation ⁽¹⁾

Intent: Reduce pollution and land development impacts from automobile use.

- Requirement: ☐ Locate building within ½ mile of installation/base transit systems. **1**
- ☐ Provide suitable means for securing bicycles, with convenient changing/shower facilities for use by cyclists, for 5% or more of building occupants. **1**
- ☐ Locate building within 2 miles of alternative-fuel refueling station(s). **1**
- ☐ Size parking capacity not to exceed minimum installation/base cantonment requirements AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants, OR, add no new parking for rehabilitation projects AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants. **1**

Technologies /Strategies: Select sites near public installation/base transit served by safe, convenient pedestrian pathways.

⁽¹⁾ Adapted material not reviewed or endorsed by U. S. Green Building Council.

1.C5 Reduced Site Disturbance ⁽¹⁾

Intent: Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

- Requirement:
- ☐ On greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways, and main utility branch trenches, and 25 feet beyond pervious paving areas that require additional staging areas in order to limit compaction in the paved area; OR, on previously developed sites, restore a minimum of 50% of the remaining open area by planting native or adapted vegetation. 1
 - ☐ Reduce the development footprint (including building, access roads and parking) to exceed the installation/base's/master plan local zoning's open space requirement for the site by 25% or in accordance with installation/base policy on open space set asides, whichever is greater. 1

Technologies /Strategies: Note requirements on plans and in specifications. Establish contractual penalties for destruction of trees and site areas noted for protection. Reduce footprints by tightening program needs and stacking floor plans. Establish clearly marked construction and disturbance boundaries. Delineate laydown, recycling, and disposal areas. Use areas to be paved as staging areas. Work with local horticultural extension services, or native plant societies, or installation/base agronomy staff to select indigenous plant species for site restoration and landscaping.

1.C6 Stormwater Management ⁽¹⁾

Intent: Limit disruption of natural water flows by minimizing storm water runoff, increasing on-site infiltration and reducing contaminants.

- Requirement: Implement a stormwater management plan that results in:
- ☐ No net increase in the rate or quantity of stormwater runoff from undeveloped to developed conditions; OR, if existing imperviousness is greater than 50%, implement a stormwater management plan that results in a 25% decrease in the rate and quantity of stormwater runoff. 1
 - ☐ Treatment systems designed to remove 80% of the average annual post development total suspended solids (TSS), and 40% of the average annual post development total phosphorous (TP), by implementing Best Management Practices (BMPs) outlined in EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA -840-B-92-002 1/93). 1

Technologies /Strategies: Significantly reduce impervious surfaces, maximize on-site stormwater infiltration, and retain pervious and vegetated areas. Capture rainwater from impervious areas of the building for groundwater recharge or reuse within building. Use green/vegetated roofs. Utilize biologically-based and innovative stormwater management features for pollutant load reduction such as constructed wetlands, stormwater filtering systems, bioswales, bio-retention basins, and vegetated filter strips. Use open vegetated swales to reduce drainage velocity and erosion, reduce system maintenance, increase vegetative variety and support wildlife habitat where space permits.

1.C7 Landscape and Exterior Design to Reduce Heat Islands ⁽²⁾

Intent: Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.

- Requirement:
- ☐ Provide shade (within 5 years) on at least 30% of non-roof impervious surface on the site, including parking lots, walkways, plazas, etc., OR, use light-colored/ high-albedo materials (reflectance of at least 0.3) for 30% of the site's non-roof impervious surfaces, OR place a minimum of 50% of parking space under-ground OR use open-grid pavement system (net impervious area of LESS than 50%) for a minimum of 50% of the parking lot area. 1
 - ☐ Use ENERGY STAR Roof compliant, high-reflectance AND low emissivity roofing (initial reflectance of at least .65 and three-year-aged reflectance of at least .5 when tested in accordance with ASTM E408) for a minimum of 75% of the roof surface; OR, install a "green" (vegetated) roof for at least 50% of the roof area. 1

Technologies /Strategies: Employ design strategies, materials, and landscaping designs that reduce heat absorption of exterior materials. Note albedo/reflectance requirements in the drawings and specifications. Provide shade (calculated on June 21, noon solar time) using native or climate tolerant trees and large shrubs, vegetated trellises, or other exterior structures supporting vegetation. Substitute vegetated surfaces for hard surfaces. Explore elimination of blacktop and the use of new coatings and integral colorants for asphalt to achieve light colored surfaces.

⁽¹⁾ Adapted material not reviewed or endorsed by U. S. Green Building Council.

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1.0 Sustainable Sites (Continued)

1.C8 Light Pollution Reduction ⁽¹⁾

Intent: Eliminate light trespass from the building site, improve night sky access, and reduce development impact on nocturnal environments.

Requirement: ☐ Do not exceed Illuminating Engineering Society of North America (IESNA) footcandle level requirements as stated in the Recommended Practice Manual: Lighting for Exterior Environments, AND design interior and exterior lighting such that zero direct-beam illumination leaves the building site. **1**

Technologies /Strategies: Consult IESNA Recommended Practice Manual: Lighting for Exterior Environments for Commission Internationale de l'Eclairage (CIE) zone and pre and post curfew hour descriptions and associated ambient lighting level requirements. Ambient lighting for pre-curfew hours for CIE zones range between .01 footcandles for areas with dark landscapes such as parks, rural, and residential areas, and 1.5 footcandles for areas with high ambient brightness such as installation/base areas with high levels of nighttime activity. Design site lighting and select lighting styles and technologies to have a minimal impact off-site and minimal contribution to sky glow. Minimize lighting of architectural and landscape features. Exterior lighting should be consistent with security lighting requirements.

1.C9 Optimize Site Features

Intent: Optimize utilization of the site's existing natural features and placement of man-made features on the site.

Requirement: ☐ Perform both of the following: **1**

- Maximize the use of free site energy.
- Plan facility, parking and roadways to "fit" existing site contours and limit cut and fill.

Technologies /Strategies: Evaluate site resources to ascertain how each can enhance the proposed project and visa versa. Work to maximum advantage of the site's solar and wind attributes. Use landscaping to optimize solar and wind conditions and to contribute to energy efficiency; Locate and orient the facility on the site to optimize solar and wind conditions.

1.C10 Facility Impact

Intent: Minimize negative impacts on the site and on neighboring properties and structures; avoid or mitigate excessive noise, shading on green spaces, additional traffic, obscuring significant views, etc.

Requirement: ☐ Cluster facilities to reduce impact, access distance to utilities and sufficient occupant density to support mass transit. **1**

☐ Collaborate with installation/base and community planners to identify and mitigate potential impacts of the project beyond site boundaries, and transportation planners to insure efficient public transport. **1**

Technologies /Strategies: Involve local/regional planners and community members in installation/base master planning processes. Recognize the context and the impact of a project beyond site boundaries, and integrate it with the larger installation/base/community context/land use.

1.C11 Site Ecology

Intent: Identify and mitigate all existing site problems including contamination of soil, water, and air, as well as any negative impacts caused by noise, eyesores, or lack of vegetation, enhancing or creating new site habitat.

Requirement: ☐ Develop site environmental management and mitigation plan. **1**

Technologies /Strategies: Understand site and surrounding ecosystem interdependence and interconnectivity. Plan landscaping scheme to incorporate biodiversity. Preserve/enhance existing trees, hydrological features, ecosystems, habitats, and cultural resources. Increase the existence of healthy habitat for native species. Reintroduce native plants and trees where they have been destroyed by previous development.

⁽¹⁾ Adapted material not reviewed or endorsed by U. S. Green Building Council.

2.0	Water Efficiency	Score	5
-----	------------------	-------	---

2.C1 Water Efficient Landscaping ⁽²⁾

Intent: Limit or eliminate the use of potable water for landscape irrigation.

- | | | |
|--------------|--|---|
| Requirement: | <input type="checkbox"/> Use high efficiency irrigation technology, OR, use captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means. | 1 |
| | <input type="checkbox"/> Use only captured rain or recycled site water for an additional 50% reduction (100% total reduction) of potable water for site irrigation needs, OR, do not install permanent landscape irrigation systems. | 1 |

Technologies /Strategies: Develop a landscaping water use baseline according to the methodology outlined in the LEED Reference Guide. Specify water-efficient, native or adapted, climate tolerant plantings. High efficiency irrigation technologies include micro irrigation, moisture sensors, or weather data based controllers. Feed irrigation systems with captured rainwater, gray water, or on-site treated wastewater.

2.C2 Innovative Wastewater Technologies ⁽²⁾

Intent: Reduce generation of wastewater and potable water demand, while increasing local aquifer recharge.

- | | | |
|--------------|---|---|
| Requirement: | <input type="checkbox"/> Reduce the use of municipally provided potable water for building sewage conveyance by a minimum of 50%, OR, treat 100% of wastewater on site to tertiary standards. | 1 |
|--------------|---|---|

Technologies /Strategies: Develop a wastewater baseline according to the methodology outlined in the LEED Reference Guide. Implement decentralized on-site wastewater treatment and reuse systems. Decrease the use of potable water for sewage conveyance by utilizing gray and/or black water systems. Non-potable reuse opportunities include, toilet flushing, landscape irrigation, etc. Provide advanced wastewater treatment after use by employing innovative, ecological, on-site technologies including constructed wetlands, a mechanical recirculating sand filter, or aerobic treatment systems.

2.C3 Water Use Reduction ⁽¹⁾

Intent: Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

- | | | |
|--------------|--|---|
| Requirement: | <input type="checkbox"/> Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting Energy Policy Act (EPACT) of 1992 fixture performance requirements. | 1 |
| | <input type="checkbox"/> Exceed the potable water use reduction by an additional 10% (30% total efficiency increase). | 1 |

Technologies /Strategies: Develop a water use baseline including all water consuming fixtures, equipment, and seasonal conditions according to methodology guidance outlined in the LEED Reference Guide. Specify water conserving plumbing fixtures that exceed Energy Policy Act (EPACT) of 1992 fixture requirements in combination with ultra high efficiency or dry fixture and control technologies. Specify high water efficiency equipment (dishwashers, laundry, cooling towers, etc.). Use alternatives to potable water for sewage transport water. Use recycled or storm water for HVAC/process make up water. Install cooling tower systems designed to minimize water consumption from drift, evaporation and blowdown.

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3.R1 Fundamental Building Systems Commissioning ⁽¹⁾

Reqd.

Intent: Verify and ensure that fundamental building elements and systems are designed, installed and calibrated to operate as intended.

- Requirement: ☐ Implement all of the following fundamental best practice commissioning procedures.
- Engage a commissioning authority.
 - Develop design intent and basis of design documentation.
 - Include commissioning requirements in the construction documents.
 - Develop and utilize a commissioning plan.
 - Verify installation, functional performance, training and documentation.
 - Complete a commissioning report.

Technologies /Strategies: Introduce standards and strategies into the design process early, and then carry through selected measures by clearly stating target requirements in the construction documents. Tie contractor final payments to documented system performance. Perform additional commissioning in accordance with the DOE Building Commissioning Guide, Version 2.2. Refer to the LEED Reference Guide for detailed descriptions of required elements and references to additional commissioning guides. Specify pre-occupancy baseline IAQ testing at time of commissioning. Test for indoor air concentrations of CO, CO₂, total VOCs and particulates. Test to assure that adequate ventilation rates have been achieved prior to initial occupancy.

3.R2 Minimum Energy Performance ⁽¹⁾

Reqd.

Intent: Establish the minimum level of energy efficiency for the base building and systems.

- Requirement: ☐ Design to meet building energy efficiency and performance as required by TI 800-01 (Design Criteria).

Technologies /Strategies: Use building modeling and analysis techniques to establish and document compliance. ASHRAE/IESNA 90.1-1999 provides guidance for establishing building base case development and analysis. Refer to the LEED Reference Guide for a wide variety of energy efficiency strategy resources.

Use a professionally recognized and proven computer program or programs that integrate architectural features with air-conditioning, heating, lighting, and other energy producing or consuming systems. These programs will be capable of simulating the features, systems, and thermal loads used in the design. Using established weather data files, the program will perform 8760 hourly calculations. BLAST, DOE-2 or EnergyPlus are acceptable programs for these purposes.

3.R3 CFC Reduction in HVAC&R Equipment ⁽²⁾

Reqd.

Intent: Reduce ozone depletion.

- Requirement: ☐ Zero use of CFC-based refrigerants in new base building HVAC&R systems. When reusing existing base building HVAC equipment, complete a comprehensive CFC phaseout conversion.

Technologies /Strategies: Specify only non-CFC-based refrigerants in all base building HVAC&R systems.

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3.0 Energy and Atmosphere (Continued)

3.C1 Optimize Energy Performance ⁽¹⁾

Intent: Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

Requirement: ☐ Reduce design energy usage (DEU) compared to the energy use budget (EUB) in joules per square meter per year for regulated energy components as described in the requirements of Chapter 11 of the TI 800-01 (Design Criteria), as demonstrated by a whole building simulation. **20**

- 1 Point will be awarded for every reduction in design energy use of 2.5% for both new and existing facilities for a maximum score of 20 points.

Regulated energy components include HVAC systems, building envelope, service hot water systems, lighting and other regulated systems as defined by ASHRAE.

Technologies /Strategies: Develop and use building modeling and analysis techniques to establish a base case that meets the minimum prerequisite standard. ASHRAE/IESNA 90.1-1999 provides guidance for establishing building base case development and analysis. Perform interactive energy use analysis for selected design elements that affect energy performance and document compliance.

Unit of measure for performance shall be annual energy usage in joules per square meter. Life-Cycle energy costs shall be determined using rates for purchased energy, such as electricity, gas, oil, propane, steam, and chilled water and approved by the adopting authority. Refer to the LEED Reference Guide or Whole Building Design Guide for a wide variety of energy efficiency resources and strategies including conservation measures, electromechanical energy efficiency technologies (for example ground-source heat pumps), passive heating and cooling strategies, solar hot water, and daylighting.

Life-Cycle costing will be done in accordance with 10 CFR 436.

Consider installation of an Energy Management and Control System (EMCS), which is compatible with exiting installation systems to optimize performance. Use sensors to control loads based on occupancy, schedule and/or the availability of natural resources use (day light or natural ventilation).

3.C2 Renewable Energy ⁽¹⁾

Intent: Encourage and recognize increasing levels of self-supply through renewable technologies to reduce environmental impacts associated with fossil fuel energy use.

Requirement: ☐ Supply a net fraction of the building's total energy use through the use of on-site renewable energy systems.

% of Total Annual Energy Usage in Renewables

5%	1
10%	2
15%	3
20%	4

Technologies /Strategies: Employ the use of on-site non-polluting-source renewable technologies contributing to the total energy requirements of the project. Consider and use high temperature solar and/or geothermal, photovoltaics, wind, biomass (other than unsustainably harvested wood), and bio-gas. Passive solar, solar hot water heating, ground-source heat pumps, and daylighting do not qualify for points under this credit. Credit for these strategies is given in Energy & Atmosphere Credit 1: Optimizing Energy Performance.

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3.C3 **Additional Commissioning** ⁽²⁾

Intent: Verify and ensure that the entire building is designed, constructed, and calibrated to operate as intended.

Requirement: ☐ In addition to the Fundamental Building Commissioning prerequisite, implement the following additional commissioning tasks: 1

1. Conduct a focused review of the design prior to the construction documents phase.
2. Conduct a focused review of the construction documents when close to completion.
3. Conduct a selective review of contractor submittals of commissioned equipment.
4. Develop a system and energy management manual.
5. Have a contract in place for a near-warranty end or post occupancy review.

Items 1, 2, and 3 must be performed by someone other than the designer.

Technologies /Strategies: Introduce standards and strategies into the design process early, and then carry through selected measures by clearly stating target requirements in the construction documents. Tie contractor final payments to documented system performance. Refer to the LEED Reference Guide for detailed descriptions of required elements and references to additional guidelines.

3.C4 **<< Deleted >>** ⁽¹⁾

3.C5 **Measurement and Verification** ⁽¹⁾

Intent: Provide for the ongoing accountability and optimization of building energy and water consumption performance over time.

Requirement: ☐ Comply with the installed equipment requirements for continuous metering as stated in selected Measurement and Verification Methods - Option B: Retrofit Isolation of the US DOE's International Performance Measurement and Verification Protocol (IPMVP) for the following: 1

- Lighting systems and controls.
- Constant and variable motor loads.
- Variable frequency drive (VFD) operation.
- Chiller efficiency at variable loads (kW/ton).
- Cooling load.
- Air and water economizer and heat recovery cycles.
- Air distribution static pressures and ventilation air volumes.
- Boiler efficiencies.
- Building specific process energy efficiency systems and equipment.
- Indoor water risers and outdoor irrigation systems.

Technologies /Strategies: Design and specify equipment to be installed in base building systems to allow for comparison, management, and optimization of actual vs. estimated energy and water performance. Employ building automation systems to perform M&V functions where applicable. Tie contractor final payments to documented M&V system performance and include in the commissioning report. Provide for ongoing M&V system maintenance and operating plan in building operations and maintenance manuals. Consider installation/base of an Energy Management and Control System (EMCS), which is compatible with existing installation/base systems to optimize performance.

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<div></div>		
3.C6	<u>Green Power</u> ⁽¹⁾	
Intent:	Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.	
Requirement:	<input type="checkbox"/> Engage in a two year contract to purchase the amount of power equal to projected building consumption generated from renewable sources that meet the Center for Resource Solutions (CRS) Green-E requirements.	1
Technologies /Strategies:	Purchase power from a provider that guarantees a fraction of its delivered electric power is from net nonpolluting renewable technologies. Begin by contacting local utility companies. If the project is in an open market state, investigate Green Power and Power Marketers licensed to provide power in that state. Grid power that qualifies for this credit originates from solar, wind, geothermal, biomass, or low-impact hydro sources. Low-impact hydro shall comply with the Low Impact Hydropower Certification Program.	
3.C7	<u>Distributed Generation</u>	
Intent:	Encourage the development and use of distributed generation technologies, which are less polluting than grid-source energy.	
Requirement:	<input type="checkbox"/> Reduce total energy usage and emissions by considering source energy implications and local cogeneration and direct energy conversion. Generate at least 50% of the building's projected annual consumption by on-site distributed generation sources.	1
Technologies /Strategies:	Investigate the use of integrated generation and delivery systems, such as co-generation, fuel cells, micro-turbines and off-peak thermal storage.	

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4.0	Materials and Resources	Score	13
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4.R1	<u>Storage & Collection of Recyclables</u> ⁽¹⁾	Reqd.
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Intent: Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

Requirement: ☐ Provide an easily accessible area that serves the entire building that is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, glass, plastics, and metals.

Technologies /Strategies: Establish a waste management plan which meets requirements of the installation/base environmental and/or solid waste management plans in cooperation with users to encourage recycling. Reserve space for recycling functions early in the building occupancy programming process and show areas dedicated to collection of recycled materials on space utilization plans. Broader recycling support space considerations should allow for collection and storage of the required elements and newspaper, organic waste (food and soiled paper), and dry waste. When collection bins are used, bin(s) should be able to accommodate a 75% diversion rate and be easily accessible to custodial staff and recycling collection workers. Consider bin designs that allow for easy cleaning to avoid health issues.

4.C1	<u>Building Reuse</u> ⁽¹⁾
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Intent: Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste, and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

Requirement: Reuse large portions of existing structures during renovation or redevelopment projects.

<input type="checkbox"/> Maintain at least 75% of existing building structure and shell (exterior skin and framing excluding window assemblies).	1
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<input type="checkbox"/> Maintain an additional 25% (100% total) of existing building structure and shell (exterior skin and framing excluding window assemblies).	1
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<input type="checkbox"/> Maintain 100% of existing building structure and shell AND 50% non-shell (walls, floor coverings, and ceiling systems).	1
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Technologies /Strategies: Evaluate retention of existing structure. Consider facade preservation, particularly in installation/base areas. During programming and space planning, consider adjusting needs and occupant use patterns to fit within existing building structure and interior partition configurations. Identify and effectively address energy, structural, and indoor environmental (lead & asbestos) issues in building reuse planning and deconstruction documents. Percentage of reused non-shell building portions will be calculated as the total area (s.f.) of reused walls, floor covering, and ceiling systems, divided by the existing total area (s.f.) of walls, floor covering, and ceiling systems.

4.C2	<u>Construction Waste Management</u> ⁽¹⁾
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Intent: Divert construction, demolition, and land clearing debris from landfill disposal. Redirect recyclable material back to the manufacturing process.

Requirement: Develop and implement a waste management plan, quantifying material diversion by weight:

<input type="checkbox"/> Recycle and/or salvage at least 50% (by weight) of construction, demolition, and land clearing waste.	1
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<input type="checkbox"/> Recycle and/or salvage an additional 25% (75% total by weight) of the construction, demolition, and land clearing debris.	1
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Technologies /Strategies: Develop and specify a waste management plan which meets requirements of the installation/base environmental and/or solid waste management plans that identifies licensed haulers and processors of recyclables; identifies markets for salvaged materials; employs deconstruction, salvage, and recycling strategies and processes, includes waste auditing; and documents the cost for recycling, salvaging, and reusing materials. Source reduction on the job site should be an integral part of the plan.

The plan should address recycling of corrugated cardboard, metals, concrete brick, asphalt, land clearing debris (if applicable), beverage containers, clean dimensional wood, plastic, glass, gypsum board, and carpet; evaluate the cost-effectiveness of recycling rigid insulation, engineered wood products and other materials; hazardous materials storage and management; and participation in manufacturers' "take-back" programs to the maximum extent possible. Refer to the LEED Reference Guide for guidelines and references that provide waste management plan development and implementation support including model bid specifications.

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4.0 Materials and Resources (Continued)

4.C3 Resource Reuse ⁽²⁾

Intent: Extend the life cycle of targeted building materials, reducing environmental impacts related to materials manufacturing and transport.

- Requirement: ☐ Specify salvaged or refurbished materials for 5% of building materials. 1
- ☐ Specify salvaged or refurbished materials for 10% of building materials. 1

Technologies /Strategies: Commonly salvaged building materials include wood flooring/ paneling/cabinets, doors and frames, mantels, iron work and decorative lighting fixtures, brick, masonry and heavy timbers. See the LEED Reference Guide for calculation tools and guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars* (see exclusions) of the salvaged or refurbished material.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: In total dollar calculations, exclude; labor costs; all mechanical and electrical material and labor costs and project overhead and fees. *If the cost of the salvaged or refurbished material is below market value, use replacement cost to estimate the material value, otherwise use actual cost to the project.

4.C4 Recycled Content ⁽¹⁾

Intent: Increase demand for building products that have incorporated recycled content material, reducing the impacts resulting from extraction of new material.

- Requirement: ☐ Specify a minimum of 25% of building materials that contain in aggregate a minimum weighted average of 20% post-consumer recycled content material, OR, a minimum weighted average of 40% post-industrial recycled content material. 1
- ☐ Specify an additional 25% (50% total) of building materials that contain in aggregate, a minimum weighted average of 20% post consumer recycled content material, OR, a minimum weighted average of 40% post-industrial recycled content material. 1

Technologies /Strategies: Specify building materials containing recycled content for a fraction of total building materials. Select products and materials with supporting information from the AIA Resource Guide or the EPA Environmentally Preferable Purchasing (EPP) Program. Common building materials and products with recycled content include; wall, partition, and ceiling materials and systems; insulation; tiles and carpets; cement, concrete, and reinforcing metals; structural and framing steel. For products/materials not listed, selection should be made on the basis of EPP criterion and/or:

- Toxicity;
- Embodied energy;
- Production use of water, energy and ozone depleting substances (ODSs);
- Production limits on toxic emissions and effluents;
- Minimal, reusable or recycled/recyclable packaging;
- Impact on indoor environmental quality (IEQ);
- Installation that limits generation of waste;
- Materials that limit waste generation over their life;
- EPA guideline compliance; and
- Harvested on a sustainable yield basis.

See the LEED Reference Guide for a summary of the EPA guidelines and calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars (see exclusions) of the material that contain recycled content.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees)

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4.C5	<u>Local/Regional Materials</u> ⁽²⁾		
Intent:	Increase demand for building products that are manufactured locally, reducing the environmental impacts resulting from transportation, and supporting the local economy.		
Requirement:	<input type="checkbox"/> Specify a minimum of 20% of building materials that are manufactured regionally within a radius of 500 miles.		1
	<input type="checkbox"/> Of these regionally manufactured materials, specify a minimum of 50% that are extracted, harvested, or recovered within 500 miles.		1
Technologies /Strategies:	<p>Specify and install regionally extracted, harvested, and manufactured building materials. Contact the state and local waste management boards for information about regional building materials. See the LEED Reference Guide for calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:</p> <ol style="list-style-type: none"> 1. Calculate total dollars (see exclusions) of material that is locally or regionally manufactured. 2. Calculate total dollars (see exclusions) of all building materials. 3. Divide Step 1 by Step 2 to determine the percentage. <p>Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees.</p>		
4.C6	<u>Rapidly Renewable Materials</u> ⁽²⁾		
Intent:	Reduce the use and depletion of finite raw and long cycle renewable materials by replacing them with rapidly renewable materials.		
Requirement:	<input type="checkbox"/> Specify rapidly renewable building materials for 5% of total building materials.		1
Technologies /Strategies:	<p>Rapidly renewable resources are those materials that substantially replenish them-selves faster than traditional extraction demand (e.g. planted and harvested in less than a 10 year cycle) and do not result in significant biodiversity loss, increase erosion, air quality impacts, and that are sustainably managed. See the LEED Reference Guide for calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:</p> <ol style="list-style-type: none"> 1. Calculate total dollars (see exclusions) of materials that are considered to be rapidly renewable. 2. Calculate total dollars (see exclusions) of all building materials. 3. Divide Step 1 by Step 2 to determine the percentage. <p>Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees.</p>		
4.C7	<u>Certified Wood</u> ⁽²⁾		
Intent:	Encourage environmentally responsible forest management.		
Requirement:	<input type="checkbox"/> Use a minimum of 50% of wood-based materials certified in accordance with the Forest Stewardship Council guidelines for wood building components including but not limited to framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers.		1
Technologies /Strategies:	Refer to the Forest Stewardship Council guidelines for wood building components that qualify for compliance to the requirements and incorporate into material selection for the project.		

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5.R1	<u>Minimum IAQ Performance</u> ⁽¹⁾		Reqd.
Intent:	Establish minimum IAQ performance to prevent the development of indoor air quality problems in buildings, maintaining the health and well being of the occupants.		
Requirement:	<input type="checkbox"/> Meet the minimum requirements of voluntary consensus standard ASHRAE 62-1999, Ventilation for Acceptable Indoor Air Quality and approved Addenda.		
Technologies /Strategies:	Include proactive design details that will eliminate some of the common causes of indoor air quality problems in buildings. Introduce standards into the design process early. Incorporate references to targets in plans and specifications. Ensure ventilation system outdoor air capacity can meet standards in all modes of operation. Locate building outdoor air intakes (including operable windows) away from potential pollutants/contaminant sources such as sporulating plants (allergens), loading areas, building exhaust fans, cooling towers, sanitary vents, dumpsters, vehicular exhaust, and other sources. Include operational testing in the building commissioning report. Design cooling coil drain pans to ensure complete draining. Include measures to control and mitigate radon buildup in areas where it is prevalent. Limit humidity to a range that minimizes mold growth and promotes respiratory health.		
5.R2	<u>Environmental Tobacco Smoke (ETS) Control</u> ⁽²⁾		Reqd.
Intent:	Prevent exposure of building occupants and systems to Environmental Tobacco Smoke (ETS).		
Requirement:	<input type="checkbox"/> Zero exposure of nonsmokers to ETS by prohibition of smoking in the building, OR, by providing a designated smoking room designed to effectively contain, capture and remove ETS from the building. At a minimum, the smoking room shall be directly exhausted to the outdoors with no recirculation of ETS-containing air to the non-smoking area of the building, enclosed with impermeable structural deck-to-deck partitions and operated at a negative pressure compared with the surrounding spaces of at least 7 Pa (0.03 inches of water gauge). Performance of smoking rooms shall be verified using tracer gas testing methods as described in ASHRAE Standard 129-1997. Acceptable exposure in non-smoking areas is defined as less than 1% of the tracer gas concentration in the smoking room detectable in the adjoining non-smoking areas. Smoking room testing as described in the ASHRAE Standard 129-1997 is required in the contract documents and critical smoking facility systems testing results must be included in the building commissioning plan and report or as a separate document.		
Technologies /Strategies:	Prohibit smoking in the building and/or provide designated smoking areas outside the building in locations where ETS cannot reenter the building or ventilation system and away from high building occupant or pedestrian traffic.		
5.C1	<u>IAQ Monitoring</u> ⁽¹⁾		
Intent:	Provide capacity for indoor air quality (IAQ) monitoring to sustain long term occupant health and comfort.		
Requirement:	<input type="checkbox"/> Install a permanent carbon dioxide (CO ₂) monitoring system that provides feedback on space ventilation performance in a form that affords operational adjustments, AND specify initial operational set point parameters that maintain indoor carbon dioxide levels no higher than outdoor levels by more than 530 parts per million at any time.		1
Technologies /Strategies:	Install an independent system or make CO ₂ monitoring a function of the building automation system. Situate monitoring locations in areas of the building with high occupant densities and at the ends of the longest runs of the distribution ductwork. Specify that system operation manuals require calibration of all of the sensors per manufacturer recommendations but not less than one year. Include sensor and system operational testing and initial set point adjustment in the commissioning plan and report. Also consider periodic monitoring of carbon monoxide (CO), total volatile organic compounds (TVOCs), and particulates (including PM10).		

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⁽¹⁾ Adapted material not reviewed or endorsed by U. S. Green Building Council.

5.0 Indoor Environmental Quality (IEQ) (Continued)

5.C2 Increase Ventilation Effectiveness ⁽²⁾

Intent: Provide for the effective delivery and mixing of fresh air to building occupants to support their health, safety, and comfort.

Requirement: ☐ For mechanically ventilated buildings, design ventilation systems that result in an air change effectiveness (E) greater than or equal to 0.9 as determined by ASHRAE 129-1997. For naturally ventilated spaces demonstrate a distribution and laminar flow pattern that involves not less than 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy. 1

Technologies /Strategies: Employ architectural and HVAC design strategies to increase ventilation effectiveness and prevent short-circuiting of airflow delivery. Techniques available include use of displacement ventilation, low velocity, and laminar flow ventilation (under floor or near floor delivery) and natural ventilation. Operable windows with an architectural strategy for natural ventilation, cross ventilation, or stack effect can be appropriate options with study of inlet areas and locations. See the LEED Reference Guide for compliance methodology guidelines.

5.C3 Construction IAQ Management Plan ⁽²⁾

Intent: Prevent indoor air quality problems resulting from the construction/renovation process, to sustain long term installer and occupant health and comfort.

Requirement: Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows:

☐ During construction meet or exceed the minimum requirements of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995, AND protect stored on-site or installed absorptive materials from moisture damage, AND replace all filtration media immediately prior to occupancy (Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13 as determined by ASHRAE 52.2-1999). 1

☐ Conduct a minimum two-week building flushout with new filtration media at 100% outside air after construction ends and prior to occupancy, OR, conduct a baseline indoor air quality testing procedure consistent with current EPA protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445. 1

Technologies /Strategies: Specify containment control strategies including protecting the HVAC system, controlling pollutant sources, interrupting pathways for contamination, enforcing proper housekeeping and coordinating schedules to minimize disruption. Specify the construction sequencing to install absorptive materials after the prescribed dry or cure time of wet finishes to minimize adverse impacts on indoor air quality. Materials directly exposed to moisture through precipitation, plumbing leaks, or condensation from the HVAC system are susceptible to microbial contamination. Absorptive materials to protect and sequence installation include; insulation, carpeting, ceiling tiles, and gypsum products. Appoint an IEQ Manager with owner's authority to inspect IEQ problems and require mitigation as necessary.

5.C4 Low-Emitting Materials ⁽²⁾

Intent: Reduce the quantity of indoor air contaminants that are odorous or potentially irritating to provide installer and occupant health and comfort.

Requirement: Meet or exceed VOC limits for adhesives, sealants, paints, composite wood products, and carpet systems as follows:

☐ Adhesives must meet or exceed the VOC limits of South Coast Air Quality Management District Rule #1168 by, AND all sealants used as a filler must meet or exceed Bay Area Air Resources Board Reg. 8, Rule 51. 1

☐ Paints and coatings must meet or exceed the VOC and chemical component limits of Green Seal requirements. 1

☐ Carpet systems must meet or exceed the Carpet and Rug Institute Green Label Indoor Air Quality Test Program. 1

☐ Composite wood or agrifiber products must contain no added urea-formaldehyde resins. 1

Technologies /Strategies: Evaluate and preferentially specify materials that are low emitting, non-irritating, nontoxic and chemically inert. Request and evaluate emissions test data from manufacturers for comparative products. Ensure that VOC limits are clearly stated in specifications, in General Conditions, or in each section where adhesives, sealants, coatings, carpets, and composite woods are addressed.

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5.0 Indoor Environmental Quality (IEQ) (Continued)

5.C5 Indoor Chemical and Pollutant Source Control ⁽¹⁾

Intent: Avoid exposure of building occupants to potentially hazardous chemicals that adversely impact air quality.

- Requirement: ☐ Design to minimize cross-contamination of regularly occupied areas by chemical pollutants: **1**
- Employ permanent entryway systems (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways, AND provide areas with structural deck to deck partitions with separate outside exhausting, no air recirculation and negative pressure where chemical use occurs (including housekeeping areas and copying/print rooms), AND provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.

Technologies /Strategies: Design to physically isolate activities associated with chemical contaminants from other locations in the building, providing dedicated systems to contain and remove chemical pollutants from source emitters at source locations. Applicable measures include eliminating or isolating high hazard areas; designing all housekeeping chemical storage and mixing areas (central storage facilities and janitors closets) to allow for secure product storage; designing copy/fax/printer/printing rooms with structural deck to deck partitions and dedicated exhaust ventilation systems; and including permanent architectural entryway system(s) to catch and hold particles to keep them from entering and contaminating the building interior.

Consider utilization of EPA registered anti-microbial treatments in carpet, textile or vinyl wall coverings, ceiling tiles or paints where microbial contamination is a concern. Utilize "breathable" wall finishes where circumstances require, to reduce moisture build-up and prevent microbial contamination. Minimize selection of fibrous materials, e.g. insulation, carpet and padding and flexible fabrics, whose exposed surfaces when exposed to the air stream or occupied space can contribute significant emissions and absorb and re-emit other contaminants over time.

5.C6 Controllability of Systems ⁽²⁾

Intent: Provide a high level of individual occupant control of thermal, ventilation, and lighting systems to support optimum health, productivity, and comfort conditions.

- Requirement: ☐ Provide a minimum of one operable window and one lighting control zone per 200 s.f. for all occupied areas within 15 feet of the perimeter wall. **1**
- ☐ Provide controls for each individual for airflow, temperature, and lighting for 50% of the non perimeter, regularly occupied areas. **1**

Technologies /Strategies: Provide individual or integrated controls systems that control lighting, airflow, and temperature in individual rooms and/or work areas. Consider combinations of ambient and task lighting control and operable windows for perimeter and VAV systems for non perimeter with a 1:1: 2 terminal box to controller to occupant ratio.

5.C7 Thermal Comfort ⁽²⁾

Intent: Provide for a thermally comfortable environment that supports the productive and healthy performance of the building occupants.

- Requirement: ☐ Comply with ASHRAE Standard 55-1992, Addenda 1995 for thermal comfort standards including humidity control within established ranges per climate zone. **1**
- ☐ Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and effectiveness of humidification and/or dehumidification systems in the building. **1**

Technologies /Strategies: Integrated envelope and HVAC system design strategies that achieve thermal comfort conditions based on mean radiant temperature, local air velocity, relative humidity, and air temperature. Install and maintain a temperature and humidity monitoring system for key areas of the building (i.e., at the perimeter, and spaces provided with humidity control). This function can be satisfied by the building automation system. Specify in system operation manuals that all sensors require quarterly calibration. Include criteria verification and system operation in commissioning plan and report.

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5.C8

Daylight and Views ⁽²⁾

Intent:

Provide a connection between indoor spaces and the outdoor environment through the introduction of sunlight and views into the occupied areas of the building.

Requirement:

- ☐ Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetration) in 75% of all space occupied for critical visual tasks, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas. Exceptions include those spaces where tasks would be hindered by the use of daylight or where accomplishing the specific tasks within a space would be enhanced by the direct penetration of sunlight. 1
- ☐ Direct line of sight to vision glazing from 90% of all regularly occupied spaces, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas. 1

Technologies
/Strategies:

Implement design strategies to provide access to daylight and views to the outdoors in a glare-free way using exterior sun shading, interior light shelves, and /or window treatments. Orient buildings to maximize daylighting options. Consider shallow or narrow building footprints. Employ courtyards, atriums, clerestory windows, skylights, and light shelves to achieve daylight penetration (from other than direct effect or direct rays from the sun) deep into regularly occupied areas of the building.

5.C9

Acoustic Environment /Noise Control

Intent:

Provide appropriate acoustic conditions for user privacy and comfort.

Requirement:

- ☐ Minimize environmental noise through appropriate use of insulation, sound-absorbing materials and noise source isolation. 1

Technologies
/Strategies:

Evaluate each occupied environment and determine the appropriate layout, materials and furnishings design.

5.C10

Facility In-Use IAQ Management Plan

Intent:

Insure the effective management of facility air quality during its life.

Requirement:

- ☐ Perform all of the following: 1
 - Develop an air quality action plan to include scheduled HVAC system cleaning.
 - Develop an air quality action plan to include education of occupants and facility managers on indoor pollutants and their roles in preventing them.
 - Develop an air quality action plan to include permanent monitoring of supply and return air, and ambient air at the fresh air intake, for carbon monoxide (CO), carbon dioxide (CO₂), total volatile organic compounds (TVOCs), and particulates (including PM₁₀).

Technologies
/Strategies:

Provide action plan for periodic system maintenance, monitoring, occupant/manager training.

⁽²⁾ © U. S. Green Building Council. Used by permission.

6.0	Facility Delivery Process	Score	7
-----	---------------------------	-------	---

6.C1 **Holistic Delivery of Facility**

Intent: Encourage a facility delivery process that actively engages all stakeholders in the design process to deliver a facility that meets all functional requirements while effectively optimizing tradeoffs among sustainability, first costs, life cycle costs and mission requirements.

- | | | |
|--------------|---|---|
| Requirement: | <input type="checkbox"/> Choose team leaders that are experienced in holistic delivery of facilities. | 1 |
| | <input type="checkbox"/> Train the entire team in the holistic delivery process. The team must include all stakeholders in the facility delivery, including the users, the contracting staff, the construction representatives, project manager, and design/engineering team members. | 1 |
| | <input type="checkbox"/> Identify project goals and metrics. | 1 |
| | <input type="checkbox"/> Plan and execute charrettes with team members at critical phases of the facility delivery. | 1 |
| | <input type="checkbox"/> Identify and resolve tradeoffs among sustainability, first costs, life cycle costs and mission requirements through charrettes and other collaborative processes. | 2 |
| | <input type="checkbox"/> Document required results for each phase of project deliverables that achieve the project goals and are measurable throughout the facility life span. | 1 |

Technologies /Strategies: Develop performance specifications or choose competitive range of products that meet environmental criteria.

Use automated modeling and analysis tools to assess site and facility design alternatives.

Conduct life-cycle cost analysis (LCCA) in the design process according to the Federal Facilities Council Technical Report, Sustainable Federal Facilities: A Guide To Integrating Value Engineering, Life Cycle Costing, and Sustainable Development, FFC # 142, 2000.

Conduct a full ecological assessment to include soil quality, water resources and flows, vegetation and trees, wildlife habitats and corridors, wetlands, and ecologically sensitive areas to identify the least sensitive site areas for development. Evaluate space utilization/functions to reduce overall space requirements, considering networking, flextime, flexi-place, dual-use, and other strategies to reduce space requirements/optimize facility size.

7.0	Current Mission	Score	6
-----	-----------------	-------	---

7.C1 **Operation and Maintenance**

Intent: Encourage the development of a facility delivery process that enhances efficient operation and maintenance of the facility.

- | | | |
|--------------|--|---|
| Requirement: | <input type="checkbox"/> Develop a facility operations and maintenance program to include: | 2 |
| | <ul style="list-style-type: none"> ▪ Commissioning instructions for all facility systems. ▪ Comprehensive facility operations and maintenance instructions for system operation, performance verification procedures and results, an equipment inventory, warrantee information, and recommended maintenance schedule. The instructions should include a comprehensive, preventive maintenance program to keep all facility systems functioning as designed. ▪ A periodic training program for occupants, facilities managers, and maintenance staff in all facility operations and maintenance activities. ▪ Instructions on sustainable cleaning and pest control practices. ▪ Develop a comprehensive site/facility recycling/waste management plan. | |
| | <input type="checkbox"/> Provide surfaces, furnishings, and equipment that are appropriately durable, according to life cycle cost analysis. | 1 |

Technologies /Strategies: Maintain facility elements, systems and subsystems on a routine maintenance schedule to ensure integrity and longevity.

Perform scheduled cleaning and maintenance activities with nontoxic environmentally preferable cleaning products and procedures. Keep air ducts clean and free of microorganisms through a structured program of preventive maintenance. Clean lighting systems following a regular maintenance schedule to ensure optimum light output and energy efficiency.

Use pesticides and herbicides sparingly and only when necessary with preference to natural methods and materials over poisons and toxic agents.

Use automated monitors and controls for energy, water, waste, temperature, moisture, and ventilation monitors and controls. Turn off the lights, computers, computer monitors, and equipment when not in use. Enable power-down features on office equipment.

7.C2 **Soldier and Workforce Productivity and Retention**

Intent: Provide a high-quality, functional, healthy and safe work environment to promote soldier and workforce productivity and retention.

- | | | |
|--------------|--|---|
| Requirement: | <input type="checkbox"/> Provide a high quality indoor environment to enhance user/occupant quality of life (QOL). | 1 |
| | <input type="checkbox"/> Provide a highly functional work environment to promote user/occupant work productivity. | 1 |
| | <input type="checkbox"/> Provide a healthy and safe work environment to sustain QOL and productivity. | 1 |

Technologies /Strategies: Use a registered/certified interior designer to provide stimulating interior environments with pleasant colors, surface treatments, room proportions and ceiling heights, external views, natural lighting, and quality detailing for interior furnishings, equipment, materials and finishes. Use IES standards to provide light to occupied space with variations in level, comfortable contrasts, natural color rendition, natural/man-made, and adequate controls to optimize light aesthetic qualities. Provide occupant control of individual work areas configuration, and lighting, thermal and ventilation systems.

Collaborate with end users to identify functional and technical requirements and to perform adjacency studies. Configure occupied space to address the specific workers/occupants functions and activities that will be carried out there. Meet TI 800-01 Design Guide requirements. Design and configure occupied space, and select furniture and equipment using human ergonomics. Identify existing user amenities, such as dining, recreation, socialization, shopping and child care facilities. Identify what amenities should be incorporated into the project or provided in the future, nearby facility. Provide ventilation air in sufficient volume free from natural and man made contaminants.

8.0	Future Missions	Score	4
------------	------------------------	--------------	----------

8.C1 **Functional Life of Facility and Supporting Systems**

Intent: Assess the functional life of a facility and its supporting systems to optimize the infrastructure investment.

- | | | |
|--------------|--|----------|
| Requirement: | <input type="checkbox"/> Identify how long the designed function is likely to occupy the current facility. | 1 |
| | <input type="checkbox"/> Identify how long the envelope, structure, HVAC, plumbing, communications, electrical, and other systems are likely to last before requiring replacement or upgrade. Consider economic, functional and physical obsolescence. | 1 |

Technologies /Strategies: Assess the typical or likely lifespan of the function(s) to be accommodated to forecast eventual adaptation to a different use(s). Assess the life spans of the various building systems/components to forecast their revision/replacement during the facility lifespan and design in a manner that facilitates revision/replacement.

Consider the life span of the weapon systems, doctrines, or other programs supported by the facility.

Use life cycle data and other sources to identify the life span of the embodied systems.

8.C2 **Adaptation, Renewal and Future Uses**

Intent: Encourage facility design that is responsive to change over time to maximize accommodation of future uses without creating waste and insuring maximum useful life of products.

- | | | |
|--------------|--|----------|
| Requirement: | <input type="checkbox"/> Identify possible future uses for the facility; consider alternatives that expand the list of possible future uses. AND Design the building to accommodate as wide a range of future uses, as practical. AND Design the installation of building systems to accommodate foreseeable change with a minimum amount of disruption, cost, and additional materials. | 1 |
| | <input type="checkbox"/> Build the smallest facility necessary to meet current mission functional requirements, using the most efficient shape and form, while taking into consideration expansion capabilities and potential future mission requirements. AND Design the facility for recycling of materials and systems. | 1 |

Technologies /Strategies: Create durable, long-lasting and adaptable facility shell and structural system. Create an adaptable, flexible facility design using open planning, service corridors, interstitial space, access floors, demountable walls/partitions, modular furniture and other adaptable space configuration/utilization strategies.

Select materials that are recyclable, avoiding composite materials, such as reinforced plastics and carpet fibers and backing. Consider selecting materials and labeling construction materials with identification information to facilitate recycling. Use pre-cut/pre-fabricated materials and use standard lengths and sizes (dimensional modularity) in design. Design facility systems and subsystems for reconfiguration and/or disassembly/recycling using reversible/reusable connectors.





Facility Points Summary

1.0 Sustainable Sites (S)		Score	0	Max 20
1.R1	<input type="checkbox"/> Erosion, Sedimentation and Water Quality Control			[Required]
1.C1	<input type="checkbox"/> Site Selection			2
1.C2	<input type="checkbox"/> Installation/Base Redevelopment			2
1.C3	<input type="checkbox"/> Brownfield Redevelopment			1
1.C4	<input type="checkbox"/> Alternative Transportation			4
1.C5	<input type="checkbox"/> Reduced Site Disturbance			2
1.C6	<input type="checkbox"/> Stormwater Management			2
1.C7	<input type="checkbox"/> Landscape and Exterior Design to Reduce Heat Islands			2
1.C8	<input type="checkbox"/> Light Pollution Reduction			1
1.C9	<input type="checkbox"/> Optimize Site Features			1
1.C10	<input type="checkbox"/> Facility Impact			2
1.C11	<input type="checkbox"/> Site Ecology			1
			0	Max 5
2.C1	<input type="checkbox"/> Water Efficient Landscaping			2
2.C2	<input type="checkbox"/> Innovative Wastewater Technologies			1
2.C3	<input type="checkbox"/> Water Use Reduction			2
			0	Max 28
3.R1	<input type="checkbox"/> Fundamental Building Systems Commissioning			[Required]
3.R2	<input type="checkbox"/> Minimum Energy Performance			[Required]
3.R3	<input type="checkbox"/> CFC Reduction in HVAC&R Equipment			[Required]
3.C1	<input type="checkbox"/> Optimize Energy Performance			20
3.C2	<input type="checkbox"/> Renewable Energy			4
3.C3	<input type="checkbox"/> Additional Commissioning			1
3.C4	<input type="checkbox"/> <<Deleted>>			
3.C5	<input type="checkbox"/> Measurement and Verification			1
3.C6	<input type="checkbox"/> Green Power			1
3.C7	<input type="checkbox"/> Distributed Generation			1
4.0 Materials and Resources (M)		Score	0	Max 13
4.R1	<input type="checkbox"/> Storage & Collection of Recyclables			[Required]
4.C1	<input type="checkbox"/> Building Reuse			3
4.C2	<input type="checkbox"/> Construction Waste Management			2
4.C3	<input type="checkbox"/> Resource Reuse			2
4.C4	<input type="checkbox"/> Recycled Content			2
4.C5	<input type="checkbox"/> Local/Regional Materials			2
4.C6	<input type="checkbox"/> Rapidly Renewable Materials			1
4.C7	<input type="checkbox"/> Certified Wood			1
5.0 Indoor Environmental Quality (IEQ) [Q]		Score	0	Max 17
5.R1	<input type="checkbox"/> Minimum IAQ Performance			[Required]
5.R2	<input type="checkbox"/> Environmental Tobacco Smoke (ETS) Control			[Required]
5.C1	<input type="checkbox"/> IAQ Monitoring			1
5.C2	<input type="checkbox"/> Increase Ventilation Effectiveness			1
5.C3	<input type="checkbox"/> Construction IAQ Management Plan			2
5.C4	<input type="checkbox"/> Low-Emitting Materials			4
5.C5	<input type="checkbox"/> Indoor Chemical and Pollutant Source Control			1
5.C6	<input type="checkbox"/> Controllability of Systems			2
5.C7	<input type="checkbox"/> Thermal Comfort			2
5.C8	<input type="checkbox"/> Daylight and Views			2
5.C9	<input type="checkbox"/> Acoustic Environment /Noise Control			1
5.C10	<input type="checkbox"/> Facility In-Use IAQ Management Plan			1

Maximum Points

6.0	Facility Delivery Process (P)	Score	0	Max 7
6.C1	<input type="checkbox"/> Holistic Delivery of Facility			7
7.0	Current Mission	Score	0	Max 6
7.C1	<input type="checkbox"/> Operation and Maintenance			3
7.C2	<input type="checkbox"/> Soldier and Workforce Productivity and Retention			3
8.0	Future Missions	Score	0	Max 4
8.C1	<input type="checkbox"/> Functional Life of Facility and Supporting Systems			2
8.C2	<input type="checkbox"/> Adaptation, Renewal and Future Uses			2
Total Score			0	Max 100

SPIRiT Sustainable Project Certification Levels

SPiRiT Bronze		25 to 34 Points
SPiRiT Silver		35 to 49 Points
SPiRiT Gold		50 to 74 Points
SPiRiT Platinum		75 to 100 Points

Project Points of Contact

[illegible]

SPIRiT Comment Sheet

Please forward any comments that you may have on this Sustainable Project Rating Tool, preferably by Email, to:

Mr. Harry Goradia
U. S. Army Corps of Engineers
ATTN: CEMP-ET
7701 Telegraph Road
Alexandria, VA 22315-3862
Phone 703-428-6460
FAX 703-428-7903
Email harry.goradia@hq02.usace.army.mil

SPIRiT Para.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

APPENDIX F
SPIRIT REQUIREMENTS AND SUMMARY
TABLE

APPENDIX F
SPIRIT REQUIREMENTS AND SUMMARY TABLE

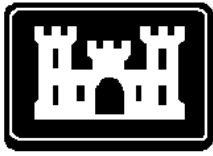
SPIRIT Requirements and Summary Table		Maximum points possible	Mandatory points in RFP	Proposal points	
PAR	FEATURE				REMARKS
NOTE: SEE SPIRIT TEXT FOR FULL DESCRIPTION OF REQUIREMENTS FOR EACH ITEM.					
COMPLIANCE IS REQUIRED IF "R" OR A NUMBER GREATER THAN ZERO APPEARS IN THE					
MANDATORY POINTS COLUMN					
1.R1	Sediment/Erosion Control Plan	R	R	R	RFP requirement
1.C1	Avoid undesirable sites	1			
	Site adjacencies/compatibility	1			
1.C2	Increase density	1			
	Minimize new infrastructure	1			
1.C3	Brownfield	1			
1.C4	Proximity to transit system	1			
	Bike racks & showers	1			
	Proximity to alternative fuel station	1			
	Parking capacity, carpool parking	1			
1.C5	Limited site disturbance , restoration	1			
	Reduced footprint	1			
1.C6	Stormwater runoff rate	1			
	Stormwater treatment	1			
1.C7	Reduce site heat islands	1			
	Reduce roof heat islands	1			
1.C8	Reduce light pollution	1			
1.C9	optimize site features	1			
1.C10	Cluster facilities	1			
	Mitigate offsite impacts	1			
1.C11	Site Ecology	1			
2.C1	High efficiency irrigation/recycle site water	1			
	no irrigation	1			
2.C2	Innovative wastewater technologies	1			
2.C3	20% Water use reduction	1			
	30% Water use reduction	1			
3.R1	Building commissioning	R	R	R	RFP requirement
3.R2	Minimum energy performance	R	R	R	RFP requirement
3.R3	CFC Reduction	R	R	R	RFP requirement
3.C1	Optimize energy performance	20			
3.C2	5% Onsite renewable energy	1			
	10% onsite renewable energy	2			
	15% onsite renewable energy	3			
	20% onsite renewable energy	4			
3.C3	Additional commissioning	1			
3.C5	Measurement and verification	1			
3.C6	Green power	1			
3.C7	Distributed generation	1			
4.R1	Storage & collection of recyclables	R	R	R	RFP requirement

APPENDIX F
SPIRIT REQUIREMENTS AND SUMMARY TABLE

4.C1	Building reuse	3			
4.C2	Reduce construction waste	1			
	Reduce construction waste addl	1			
4.C3	Salvage/reused materials	1			
	Salvage/reused materials addl	1			
4.C4	Materials recycled content	1			
	Addl materials recycled content	1			
4.C5	Regionally manufactured materials	1			
	Regionally extracted materials	1			
4.C6	Rapidly renewable materials	1			
4.C7	Certified wood	1			
5.R1	Minimum IAQ performance	R	R	R	RFP requirement
5.R2	Environmental tobacco smoke	R	R	R	RFP requirement
5.C1	IAQ monitoring	1			
5.C2	Increase ventilation effectiveness	1			
5.C3	SMACNA/absorptive mtls/filtration	1			
	Flushout/baseline IAQ test	1			
5.C4	Adhesive/sealant VOC	1			
	Green Seal paints & coatings	1			
	CRI Green Label carpet	1			
	No urea/formaldehyde resins	1			
5.C5	Indoor pollutant source control	1			
5.C6	Operable windows, perimeter light controls	1			
	Non-perimeter controls	1			
5.C7	ASHRAE thermal comfort stds	1			
	Temperature/humidity monitoring	1			
5.C8	75% daylighting	1			
	90% outdoor view	1			
5.C9	Noise control	1			
5.C10	IAQ management plan	1			
6.C1	Team leader experience	1			
	Train team	1			
	Identify project goals	1			
	Charettes	1			
	Resolve tradeoffs	1			
	Document results	1			
7.C1	Develop O&M plan	2			
	Durable materials	1			
7.C2	Quality indoor environment	1			
	Functional work environment	1			
	Healthy work environment	1			
8.C1	Determine functional life	1			
	Determine building life	1			
8.C2	Design for future uses	1			
	Minimize building size	1			
	TOTAL	100			

APPENDIX G

INTERIOR DESIGN PRESENTATION FORMAT



US Army Corps
of Engineers
Savannah District

Interior Design Presentation Format

February 1999

U.S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

**THE SAVANNAH DISTRICT'S MANUAL
FOR INTERIOR DESIGN PRESENTATION**

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**THE SAVANNAH DISTRICT'S MANUAL
FOR INTERIOR DESIGN PRESENTATION FORMAT**

A. This format is required in accordance with THE SAVANNAH DISTRICT DESIGN MANUAL section 10.8.9. And is developed in accordance with Air Force and Army interior design requirements for SID/CID submittals.

B. SID/CID PACKAGES RUN CONCURRENT WITH THE ARCHITECTURAL SUBMITTALS.

C. "Checklists for Reviews" and "Lessons Learned" are to be used to ensure all required information is included in the Contract Documents, the SID/CID presentation binders and to achieve customer satisfaction.

D. The General Contractor will not be receiving the 8 ½" X 11" SID/CID binders. Verify that all graphic illustrations such as carpet borders, ceramic tile patterns, accent color placement, millwork details and prewired furniture finished and details are on the contract drawings.

E. DO NOT REFERENCE THE SID/CID BINDERS IN THE CONTRACT DOCUMENTS.

F. THIS INFORMATION IS NOT OPTIONAL WHEN PRESENTING A SID/CID SUBMITTAL FOR REVIEW and FINAL DESIGN.

G. The Interior Design Point of Contact for the Savannah District is:

U.S. Army Corps of Engineers
ATTN: EN-DA/Peggy Roberson
100 W. Oglethorpe Avenue
Savannah, GA 31402-0889
COMM (912) 652-5544 FAX (912) 652-5891

GOVERNMENT CONTRACTING TERMS

ARMY	AIR FORCE	DEFINITION
MCA	MILCON	MILITARY CONSTRUCTION funds appropriated by Congress for new construction-fixed price contracts.
OMA	O & M	OPERATION AND MAINTENANCE funds provided to each installation by the Major Command and used for the day to day operations of the installation. These funds may be used for the renovation of existing buildings or for the purchase of furniture. Funds not spent to award a contract disappear at the end of the FY and cannot be recovered.
FY	FY	FISCAL YEAR: (A) October 1 through September 30 per the calendar. (B) If the project title begins with "FY- . ." This identifies the year Congress will fund the construction Contract Award.
PD	PD	PROJECT DEFINITION: A conceptual design of the proposed project (floor plans, elevations, cost estimate).
DD FORM 1391	DD FORM 1391	A programming document initiated by the installation; passed through the Major Command on to Congress for funding. The 1391 outlines basic needs for a proposed facility and an estimated cost to reach those needs.
JOC	SABER	JOB ORDER CONTRACT OR SIMPLIFIED ACQUISITION OF BASE ENGINEERING REQUIREMENTS: The installation's method to contract for repair work. Unit prices are agreed upon with a Contractor then individual job orders are negotiated for specific scopes of repair work.

GOVERNMENT CONTRACTING TERMS

ARMY	AIR FORCE	DEFINITION
CBD	CBD	COMMERCE AND BUSINESS DAILY: The federal government's "want ads". Advanced notice of contracting actions & requests for A-E Services.
IFB	IFB	INVITATION FOR BID: Standard contract procedures with clearly defined requirements, specifications and terms that are not negotiated. Any proposal prepared in response to an IFB must strictly adhere to the terms. Award is based on the lowest bid meeting the requirements and specifications.
RFP RFQ	RFP RFQ	A REQUEST FOR PROPOSAL is flexible in contrast to an IFB. It usually defines a problem and allows those who respond to the RFP to suggest a solution.
DESIGN BUILD	DESIGN BUILD	A REQUEST FOR QUOTES is an informal request for price for standard item. Using the RFP format, performance requirements are outlined; the Construction Contractor and A-E subcontractor are responsible for the design of specifics to meet performance requirements.
APPENDIX A	APPENDIX A	The contractual scope of work for A-E contracts which outlines basic requirements includes specific deliverables and the schedule of design submittals.
SF 254 & 255	SF 254 & 255	STANDARD FORMS to provide resume information to the government regarding the qualifications of A-E's responding to a CBD announcement.

GOVERNMENT CONTRACTING TERMS

ARMY	AIR FORCE	DEFINITION
SID	SID	STRUCTURAL INTERIOR DESIGN: Building related finishes; funded with MCA or MILCON dollars; Building Materials and finishes are purchased and installed by the General Contractor; a submittal with samples of proposed building materials being used on a particular project.
CID	CID	COMPREHENSIVE INTERIOR DESIGN: Furniture related; funded with OMA or O & M dollars: a submittal with furniture illustrations, fabric & finish samples, footprint plans, and furniture ordering information. Purchased by the installation and not by the General Contractor.
PREWIRED WORKSTATION	PREWIRED WORKSTATION	PREWIRED WORKSTATION is the term used to identify systems furniture purchased with MCA or MILCON funds. The designers will coordinate the footprint plans with the buildings systems and provide the plans and specifications in the contract documents. The General Contractor will purchase and install this furniture.
SYSTEM FURNITURE	SYSTEM FURNITURE	SYSTEMS FURNITURE is the term used to identify systems furniture purchased with OMA or O& M dollars. The designer will coordinate the footprint plans with the Building systems and provide the plans in the contract documents for "information only. "I Procurement information will appear in the CID and will be purchased by the installation.

ARMY	AIR FORCE	DEFINITION
FAR	FAR	FEDERAL ACQUISITION REGULATIONS: The laws outlining how the government buys products and services. Title 18 of the U.S.Code allows for direct purchase from UNICOR without competitive bids. (FAR) 8.6 identifies UNICOR as a mandatory procurement source to all federal agencies for products that meet the requirements of the ordering office.
FSS	FSS	FEDERAL SUPPLY SCHEDULES provides indefinite quantity contracts for commercial items at established prices for direct ordering use by government agencies. Address: Furniture Commodity Center (3FN-CO): Crystal Mall 4, RM 403, Washington DC 20406 (703) 305-5056.
UNICOR	UNICOR	UNICOR is the trade name for the Federal Prison Industries Inc (FPI) a wholly owned government corporation est. in 1934. UNICOR provides a variety of products and services to the Federal Government.
GSA FSC/FSG	GSA FSC/FSG	GENERAL SERVICES ADMINISTRATION FEDERAL SUPPLY CLASSES FEDERAL SUPPLY GROUPS are government contracts with private manufacturers that are fixed price, fixed MOL and fixed dates of expirations. GSA CENTRALIZED MAILING LIST SERVICE (7CAFL); PO BOX 6477 FT. WORTH. TX 76115 (817) 334-5215

GOVERNMENT CONTRACTING TERMS

ARMY	AIR FORCE	DEFINITION
MOL	MOL	MAXIMDM ORDER of LIMITATION: GSA FSC/FSC contracts have a ceiling contract dollar amount that can be purchased from a vendor.
OPEN MARKET	OPEN MARKET	OPEN MARKET is the term indicating products that are not on a GSA contract.
ENVIRONMENTAL PRODUCTS GUIDE	ENVIRONMENTAL PRODUCTS GUIDE	GSA CATALOG SUPPLY ITEMS GSA CENTRALIZED MAILING LIST SERVICE (7CAFL); PO BOX 6477 FT. WORTH, TX 76115 (8x7) 334-5215
FSN 595B	FSN 595B	FEDERAL STANDARD NUMBER 595B A Collection of standard colors used by the various departments or agencies.. Colors have been classified in three categories: 1 is full gloss, 2 is semi gloss and 3 is flat.
FSN 595B FAN DECK	FSN 595B FAN DECK	Standard colors are available in a booklet for under \$10.00 . Order number NSN 7690-01-162-2210 GSA Specification Unit (3F-BP-W) Seventh and D Sts SW Washington DC 20407

INTERIOR DESIGN PRESENTATION FORMAT

GENERAL NOTES

1. DEFINITIONS:

1.1 STRUCTURAL INTERIOR DESIGN (SID): Structural Interior Design is the term referring to the building related finishes. A SID shall involve the selection and sampling of all applied finishes necessary to complete required, the SID shall also include all prewired workstation drawings and specifications. All SID information shall be presented in a 3-ring Binder, 8 ½ x 11" format. The products sampled in the SID are to be purchased by the General Contractor and are MCA or MILCON funded.

1.2 COMPREHENSIVE INTERIOR DESIGN (CID): Comprehensive Interior Design is the term referring to the furniture related finishes. A CID shall involve the selection and sampling of all the furnishings components necessary to complete the interior environment. The CID shall generally include all free standing furnishings, accessories, Furniture Cost Estimate and generic Order Forms. The products illustrated in the CID are purchased by the installation and are OMA or O&M funded.

1.3 When a "CID Package" is required in the DD Form 1391 and/or the Appendix A, the A/E shall provide to the Government both the SID/ CID illustrated information in the required 8-1/2 X 11 format.

2 . TECHNICAL NOTES:

2.1 SPECIAL REQUIREMENTS: The Interior Designer shall identify items in the SID or CID that require attachment to the building either by cutting or fitting. The Designer must prepare specifications and drawings for this service to be performed.

2.2 DISCLAIMER: Guide Specification 09000 or 09915 Exterior/Interior Finish Schedule indicates all product trade names and colors used for the project. The nonproprietary disclaimer indicated within this Guide Specification may also be located on the Finish Schedule of the Contact Drawings.

2.3 FEDERAL STANDARD 595b COLORS (FSN 595b): The use of the Federal Standard Colors is required when indicating exterior colors used on roofs and trim. The use of Federal Standard Colors is not required when indicating interior colors. EXCEPTION: Hurlburt Field, FL requires both exterior and interior paint colors to be indicated with the FSN 595b code.

2.4 CID FURNITURE RESOURCE: Every effort should be made to use UNICOR, GSA Stock or Federal Supply Schedule items. However, when the Interior Designer determines CID items available on FSS/GSA contract or from UNICOR do not meet the functional requirements or there is no current FSS/GSA/ UNICOR resource for a furniture requirement, a waiver to use an Open Market source is required. The Designer shall write a waiver/justification letter (Paragraph 15).

This letter shall be included in the CID Binder; attached to the required Order Form. The Government will process the waiver.

3. SIGNAGE:

Signage is critical to "pathway finding" and is to meet the requirements indicated in the American With Disabilities Act unless directed by the client to do otherwise.

Indicate on separate signage drawings the typical plaque sizes, types locations, and the message for all signage. Submit a sample of the signage color in the SID.

4. SID/CID SUBMITTAL REQUIREMENTS

4.1 The Interior Designer shall be involved in all phases of the design in order to ensure customer satisfaction.

4.2 REVIEWS: During each phase of the project all SID/CID Binders shall be reviewed by the Government with written and annotated comments being issued back to the A/E. This is done in Projnet/DrChecks. See the Savannah District Design Manual for further instructions on this Internet database. These annotated comments are to be incorporated into the next SID/CID Binder update. A printed hard copy of responses from the Interior Designer are to be included in the front inside pocket of the first volume of the SID Binder.

4.3 FORMAT: Submit all SID/CID information and samples on 8-1/2"x 11" color boards with a maximum spread of 25-1/2" for foldouts.

-

Each binder shall be labeled on the outside spine and front cover with the Phase %, SID or CID, Project title, Location, Date, and A/E firm. Indicate the volume number (example: Vol. 1 of 3).

Each sheet shall be labeled with the Date, Project Title, Location, A/E firm.

4.3.1 The color boards shall support and anchor all samples. Anchor large or heavy samples with mechanical fasteners or with Velcro. Rubber cement or glue will not be acceptable.

4.3.2 Assemble the 8 1/2" x 11" pages and color boards in a 3-ring binder.

4.3.3 Material and finish samples must indicate true pattern, color and texture. Carpet samples must be large enough to indicate a complete pattern or design.

4.3.4 Photographs or colored photocopies of SID materials or CID fabrics will be disapproved. Color photocopies of artwork are accepted.

4.4 REVISIONS: The Interior Designer shall revise the binders after each review to satisfy review comments. Printed information on existing pages can be updated with "white-out" for cost effective reasons. If the binders are not returned to the A/E for in-house update, the A/E may provide updated inserts to the Government.

4.5 RENDERINGS: Verify that renderings are a contract requirement. All renderings shall be provided by a professional illustrator.

4.6 BLACK AND WHITE SKETCHES: Verify that B&W Sketches are a contract requirement. If they are required, emphasize space-relationships, furnishings, patterns and texture. One major area is to be illustrated and possibly used as a basis for the interior color rendering for the final design.

4.7 SEQUENCE: Organize the SID/CID Binder presentation according to the following sequence:

SEQUENCE OF SID SUBMITTAL

1. TITLE PAGE
2. TABLE OF CONTENTS
3. NARRATIVE OF INTERIOR DESIGN OBJECTIVES
4. EXTERIOR ELEVATION
5. EXTERIOR BUILDING MATERIAL LEGEND
6. EXTERIOR BUILDING MATERIAL COLOR BOARD
7. INTERIOR COLOR PLACEMENT PLAN
(Half size drawing or 8 1/2" X 11")
8. INTERIOR COLOR BOARDS (according color placement plan)

9. INTERIOR SIGNAGE COLOR BOARDS
10. PREWIRED WORKSTATION COLOR BOARDS
11. INTERIOR FLOOR PLANS
12. ROOM FINISH SCHEDULES
13. SIGNAGE PLANS
14. PREWIRED WORKSTATION COMPOSITE FLOOR PLAN
15. PREWIRED WORKSTATION PANEL PLAN
16. PREWIRED WORKSTATION ELECTRICAL/VOICE/DATA PLAN
17. PREWIRED WORKSTATION ELEVATION AND INVENTORY DRAWINGS

SEQUENCE OF CID SUBMITTAL

18. TITLE PAGE
19. TABLE OF CONTENTS
20. NARRATIVE OF INTERIOR DESIGN OBJECTIVES
21. PHOTO OF INTERIOR COLOR RENDERING (only if required by contract)
22. BLACK AND WHITE SKETCH PERSPECTIVE (only if required by contract)
23. COMPOSITE FURNITURE PLANS WITH CONVENTIONAL AND SYSTEMS FURNITURE (full size sheet 1/8" scale. Note: provide all systems furniture plans in the contact drawings and indicate "for information only." This is only if the user is buying and installing the systems furniture. Drawing requirements are the same as indicated in items 11-15 of the SID Sequence.
24. MANUFACTURE'S SUMMARY LISTS
25. FURNITURE LOCATION CODE INDEX
26. CONVENTIONAL FURNITURE PLACEMENT PLANS (1/4" scale)

- 27. CONVENTIONAL FURNITURE ILLUSTRATION SHEETS
- 28. ARTWORK ILLUSTRATION SHEETS AND PLACEMENT PLAN
- 29. ITEMIZED FURNITURE COST ESTIMATE
- 30. INTERIOR FURNISHING ORDER FORMS
- 31. LETTER OF JUSTIFICATION FOR WAIVER

5. SID/CID SUBMITTAL MATRIX SUMMARY

INTERIOR DESIGN SUBMITTALS RUN CONCURRENT WITH ARCHITECTURAL SUBMITTALS

ITEM	DESCRIPTION	DESIGN PHASE			
		35%	65%	95%	100% RTA
1.	TITLE PAGE	X	X	X	X
2.	TABLE OF CONTENTS (SID)	X	X	X	X
3.	NARRATIVE (SID)	X	X	X	X
4.	EXTERIOR ELEVATIONS	X	X	X	X
5.	EXTERIOR MATERIAL LEGEND	X	X	X	X
6.	EXTERIOR COLOR BOARDS	X	X	X	X
7.	INTERIOR COLOR PLACEMENT PLAN	X	X	X	X
8.	INTERIOR COLOR BOARDS	X	X	X	X
9.	SIGNAGE COLOR BOARD	X	X	X	X
10.	WORKSTATION COLOR BOARDS	X	X	X	X
11.	INTERIOR FLOOR PLANS	X	X	X	X
12.	ROOM FINISH SCHEDULE	X	X	X	X
13.	SIGNAGE PLANS	X	X	X	X
14.	PREWIRED WORKSTATIONS COMPOSITE FLOOR PLAN	X	X	X	X
15.	PREWIRED WORKSTATION PANEL PLANS	X	X	X	X
16.	PREWIRED WORKSTATION ELECTRICAL/VOICE/DATA PLANS	X	X	X	X
17.	WORKSTATION ELEVATIONS AND INVENTORY DRAWINGS			X	X
18.	TITLE PAGE (CID)	X	X	X	X
19.	TABLE OF CONTENTS	X	X	X	X
20.	NARRATIVE	X	X	X	X
21.	PHOTO OF PROPOSED RENDERING TECHNIQUE (APPROVAL NEEDED)	X			
21a.	FINAL INTERIOR RENDERING			X	X

5. Con't.

SID/CID SUBMITTAL MATRIX SUMMARY

INTERIOR DESIGN SUBMITTALS RUN CONCURRENT WITH
ARCHITECTURAL SUBMITTALS

ITEM	DESCRIPTION	DESIGN PHASE			
		35%	65%	95%	100% RTA
22.	BLACK AND WHITE SKETCHES (ONE SHALL BE APPROVED FOR THE INTERIOR RENDERING)		X	X	X
23.	COMPOSITE AND SYSTEMS FURNITURE PLANS	X	X	X	X
24.	MANUFACTURER'S SUMMARY LIST			X	X
25.	FURNITURE LOCATION CODE (ONE MAJOR AREA)	X			
25A.	FURNITURE LOCATION CODES (ALL AREAS)		X	X	X
26.	FURNITURE PLACEMENT PLANS (ONE MAJOR AREA)	X			
26A.	FURNITURE PLACEMENT PLANS (ALL AREAS)		X	X	X
27.	FURNITURE INSTALLATION SHEETS (ONE MAJOR AREA)	X			
27A.	FURNITURE INSTALLATION SHEETS (ALL AREAS)		X	X	X
28.	ARTWORK ILLUSTRATION SHEETS (PUBLIC AREAS ONLY, ARTWORK NOT REQUIRED IN PRIVATE OFFICES).			X	X
29.	ITEMIZED COST ESTIMATE		X	X	X
30.	FURNITURE ORDER FORMS (ONE MAJOR AREA)	X			
30A.	FURNITURE ORDER FORMS (ALL AREAS)			X	X
31.	LETTERS OF JUSTIFICATION		X	X	X

6. TYPICAL CID FURNISHINGS AND COST GUIDELINES

6.1 CID FURNISHINGS

ADP tables/printer stands
Acoustical Partial Height Partitions 6' of less in height - freestanding
Artwork
Beds/wall units/ night stands/ chests/ refrigerators
Bedspreads/bedding
Bookcases
Bulletin board/ projection screens (If NOT attached to structure.)
Carts
Chairs - all kinds, including stools
Desks - freestanding
Drafting tables
Draperies
Files - all kinds
Library furniture - book stacks/card files/ study carrels
Modular desk units
Podium/ lecture stands
Systems furniture workstations (If not in SID)
Planters/art/waste & ash receptacles
Storage - all kinds
Tables - all kinds
Upholstered lounge seating (sofas, etc.)
Wardrobes

6.2 FURNISHINGS COST GUIDELINES

The figures are based on an Air Force FY 88 Costs Guide and an inflation factor of 5% per year should be included for subsequent years. These guidelines are for actual items (furniture, window treatments, accessories, etc.) and they do not include other associated cost such as contractor's overhead, profit and shipping.

Overseas Consideration: If local items are used prices may vary from country to country and may vary depending on the current exchange rates.

<u>FACILITY TYPE</u>	<u>\$/SQUARE FEET</u>
.	
Administration Space (Conventional Furn)	\$ 7.00 - \$15.00
Administration Space (Systems Furn)	\$33.00 - *
Airmen Club (Not incl kitchen equip)	\$14.00
Alert Facilities	\$12.00

Auditorium	\$35.00
Base Ops DV Lounge	\$18.00
Billeting Office	\$15.00
Chief Suite (Billeting)	\$17.00
Child Development Center	\$13.00
Classroom	\$20.00
Clinic/Dental Clinic (not incl equip)	\$35.00
Conference Room	\$18.00
Dining Facility (incl kitchen equip)	\$35.00-\$45.00
Dining Facility (not incl kitchen equip)	\$15.00
DV Suite (Billeting)	\$24.00
Flight .Training Center	\$30.00
Family Housing Office	\$14.00
Golf Clubhouse	\$12.00
Intelligence Training Center	\$30.00
Medical Training Center	\$30.00
Package Store	\$28.00
NC Officer Mess (Not incl Kitchen equip)	\$17.00
Officer Open Mess (Not incl Kitchen equip)	\$17.00
Recreation Center	\$11.00
Transient Living Facility	\$15.00
Unenlisted Personnel Housing	\$16.00*

Visiting Airman Quarters	\$13.00
Visiting Officers Quarters	\$16.00*
Yacht Clubhouse	\$12.00
Youth Center	\$12.00

FACILITY TYPE\$/SQUARE FEET*UNIT BUDGET GUIDES

Admin Space (Systems Furn)

1994 price
(\$4,000/per workstation)
incl install(ergo chair \$350.00)

1988 Price

Billeting Office/Lobby

\$14,000-\$16,000 refinish existing.
\$35.0000-50,000 for new

Distinguished Visitor Suite

\$15,000 per one bedroom suite
\$20,000 per two bedroom suite
\$37,000 per 2/3 bedroom apartment

Transient Living Facility
One Bedroom, Living/Dining
525 sq feet (new construction).

\$15,000 per standard unit

Dorms

Unaccompanied Enlisted

\$2,500-\$3,500 Per person

Personnel Housing

UOPH

\$ 7,000 per single unit

VAQ

\$ 6,000 per double occupancy

VOQ

\$ 5,000 per single occupancy
\$ 8,000 per single Suite
\$11,000 per double Suite

PARAGRAPHS 7-15 EXPLAIN THE FORMAT REQUIRED FOR THE FOLLOWING:

7. PREWIRED AND SYSTEMS FURNITURE WORKSTATIONS
8. MANUFACTURE'S SUMMARY LIST
9. FURNITURE LOCATION CODES
10. FURNITURE ILLUSTRATION SHEETS
11. FURNITURE PLACEMENT PLANS
12. ARTWORK
13. FURNITURE COST SUMMARY

- 14. ORDER FORMS
- 15. LETTER OF WAIVER JUSTIFICATION

7. PREWIRED AND SYSTEMS FURNITURE

7.1 General

Prewired and or systems furniture workstations shall be designed with generic components and work surfaces that are typically sold by various manufacturers of systems furniture. Indicate on the contract drawings one manufacture's name and finishes as a bases for design. This will provide a general of range colors for competitive bid purposes. Indicate in the Guide Specifications 12640 Prewired Workstations, the fabric width, fiber content, and construction method. DO NOT INDICATE A VENDOR IN THE SPECIFICATIONS. INDICATE A VENDOR ONLY ON THE DRAWINGS.

7.2. COMPOSITE FLOOR PLAN

A Composite floor plan shall show the all panels, components and free-standing furniture in relationship to the building and the building system-s such as light switches and mechanical devices.

7.3. PANEL PLAN

The panel plan shall indicate a panel symbol legend, all panel placements, critical dimensions of aisles widths and critical dimensions in relation to the building's structure and the building's n electrical/mechanical system devices and the panels. Each panel shall be noted as follows:

N (non-power)	Width (in feet)	Height (in inches)
or		
P (power)		

Example: a non-powered panel 2 feet wide and 68 inches high will be noted on the plan N 2 68

7.4 ELECTRICAL, VOICE AND DATA PLAN

The Electrical, voice and data plans shall indicate all panel placements, a symbol legend, and all receptacles used in each workstation. This plan shall also indicate the height and location of the building's light switches and building's mechanical control devices like thermostats. Provide a general note that on the "PREWIRED WORKSTATION plans" are to be coordinated with the Communication and Mechanical Engineering Plans.

7.5 ELEVATIONS AND INVENTORY PLAN

The Elevation and inventory drawings shall illustrate each typical workstation in elevation form with a related inventory list of all panels and components used to build the typical. The inventory list shall be generic in description.

7.6 FINISHES

It is suggested when selecting finishes for prewired workstations that only two (2) fabric colors be used: one color for all panels and one color for tack boards. A third color can be used as a means of "way finding" for large open office projects.

7.7 COST

The average cost of a prewired workstation is \$4000.00. Do not exceed this average cost figure or the project will be rejected. Verify line item 10 in the 1391 for a line item total cost of the prewired workstations appropriated for the project.

7 . 8 WORKSTATION LOCATION CODE

Each and every workstation will be identified on each plan with a single alpha identification code to indicate the "Typical". For example all like reception stations are "A" and like offices are "B". Every workstation shall have a "room number" that is separate and apart from the fixed room numbering system. This is to provide consistent workstation identification throughout all drawings. An example would be "A-100" "B-101" "B-102" "B-103"

7.9 PREWIRED WORKSTATION PACKAGE ITEMS

1. Panels
 - 1.1 Acoustical/non-acoustical
 - 1.2 Powered/non-powered
 - 1.3 Connecting hardware
2. Components
 - 2.1 Work surfaces
 - 2.2 Drawers
 - 2.3 Shelves(with doors/ without doors)
 - 2.4 Files (lateral, panel hung/ bins)
 - 2.5 Task Lights/special purpose
 - 2.6 Counter tops
 - 2.7 Drafting surface

- 3. Accessories
 - 3.1 Tack boards
 - 3.2 Locks
 - 3.3 Shelf dividers
 - 3.4 Reader Stand
 - 3.5 Paper flow devices
 - 3.6 Marker boards
 - 3.7 Computer turntable
 - 3.8 Printer stand
 - 3.9 Coat rack
 - 3.10 Wire guides
- 4. Signage
 - 4.1 Organization signs
 - 4.2 Workstation name signs

8. MANUFACTURER'S SUMMARY LIST

Provide a summary of all the manufactures' used in the CID package.
Manufactures name, address, phone, fax and Point of Contact is to be included.

9. FURNISHINGS LOCATION CODE

This CODE is assigned by the interior designer to each conventional furnishing item indicated in the CID. Use of this code is important for quick reference between Order Forms, Furniture Illustrations, and Placement Plans.

The first letter of the code is a GENERAL CATEGORY

EXAMPLE:

- A - Accessories
- B - Book storage
- C – Chairs

The second number of the code is a SPECIFIC CATEGORY

- 1 - Plant (7' height in brass container)
- 2 - Clocks, Peter Pepper, #0000 Color Blue
- 3 - Wastebaskets, FSS, Color Black
- 4 - Chalkboard: Egan Visual, Oak

OVERALL EXAMPLE: C1, C2 and C3

C - CHAIRS

- 1 - Guest chair, Knoll, #1234, Color: #12 Red
- 2 - Ergo Chair, Knoll Bulldog, 1233, Color: #34- Blue
- 3 - Stacking Chair, Fixtures, Bola, 1234, Color #12 Multi

10. FURNITURE ILLUSTRATION SHEET

A Furniture Illustration Sheet is a pictorial example with finish samples of a single product specified for the CID. Only one product is illustrated per page.

The Furniture Illustration Sheet shall have the following information:

1. A Picture or line drawings of the product specified.
2. A Location Code to Key the specified product to the Footprint
3. A Sample of the product's finishes.
4. Recap quantity of illustrated item listed by room number (e.g. 4 ea.
Room 104 Commander
3 ea. Room 103 Receptionist)
5. Job name, Job Location, Date.

11. FURNITURE PLACEMENT PLAN

A Furniture Placement Plan consist of one room broken out from the Composite Furniture Plan which identifies each furniture component shall be illustrated in the Furniture Placement Plan section. The Furniture Placement Plans shall be drawn at a 1/4" scale. Large rooms/areas shall be drawn at 1/8" scale.

Each Furniture Placement Plan shall contain the following:

1. 1/4" Scale-Drawing showing room and furniture.
2. Location Code and quantity of each item specified per room.
3. Name and Number of Room
4. Job Name, Job Location, Date.

The Composite Furniture Plan shall be a full size contract drawing with location codes. Half sizes will not be acceptable for review.

12. ARTWORK ILLUSTRATIONS SHEETS AND PLANS

The Artwork Illustrations Sheets shall have a pictorial example of the artwork with mat colors. Color photos copies are accepted.

Full size drawings of the Artwork Plan are to show plan placement of artwork and an elevation for all the artwork showing placement height and installation instructions.

Each Artwork sheet shall have the following:

1. A Picture of the proposed artwork.
2. Location Code
4. Room Name and Number that artwork will be displayed in.
5. Job name, Job Number, Date.
6. Mounting height and installation instructions.

13. ITEMIZED FURNITURE COST ESTIMATE

The itemized furniture cost estimate sheets list all furnishings; indicate quantities, unit costs and grand totals. The Cost Estimate is organized according to UNICOR and GSA Source/Schedules. The Cost estimate will also include a general 10% contingency and 7% installation. Because some items will include freight in the price. Note that freight charges are not included.

14. FURNITURE ORDER FORM

The Furniture Order Forms indicate all information necessary to order products specified in the CID. Only one product shall be listed per page.

Organize and separate the Order Forms according to the Sources and GSA Schedules to coordinate with the Itemized Furniture Cost Estimate. Do not organize forms according to the locations codes.

15. LETTER FOR WAIVER/JUSTIFICATION

FOR CID ITEMS THAT REQUIRE A JUSTIFICATION, SUCH AS OPEN MARKET ITEMS FOLLOW THE FORMAT EXAMPLE AND ATTACH IT TO THE APPROPRIATE ORDER FORM. See Appendix "C" for UNICOR Waiver information.

JUSTIFICATION FOR ACOUSTICAL PANELS

December 15, 1994

1. REQUESTING ACTIVITY:	U.S. Army Corps of Engineers EN-DA/Peggy Roberson 100 W. Oglethorpe Avenue Savannah, GA 31402-0889
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2. POINT OF CONTACT: Peggy Roberson
(912) 652-5144

3. REQUIREMENTS: To provide acoustical and visual control through a cost effective and timely means. The panels will separate and define workstations for 7 individuals representing 5 engineering disciplines. These individuals are located in 1,470 sq. ft. of open area.

4. PROPOSED SOLUTION: To purchase portable, acoustical panels 62 inches high and various widths from XYZ manufacture. This manufacturer delivers and installs within 30 days from the date they received the order. See the attached order form for stock number, dimensions, colors and manufacturers.

5. UNICOR WAIVER: Market research indicates that the Federal Prison Industry does not supply this type of portable panel.

6. TRIANGLE/INTANGIBLE BENEFITS: The tangible benefits to be gained from this purchase will be an enhancement of employee morale and productivity due to the reduction of sound and visual disturbances currently found in this open space.

7. IMPACT IF REQUEST IS NOT APPROVED: Employee morale will drop, which could impact performance.

8. ESTIMATED DATE ITEMS ARE REQUIRED: ASAP but no later than 30 days.

16. HEALTH AND SAFETY CRITERIA

16.1 PROVIDE PROTECTION AGAINST PERSONAL INJURY AND DEATH FROM:

16.1.1 FALLS

* ASTM D-2047-Test for Slip Resistance of Hard Surfaces

16.1.2 CHEMICAL EMISSIONS

16.1.3 ELECTRONIC EMISSIONS

16.1.4 MICROBIAL CONDITIONS

NOTE: 16.1.2, 16.1.3, and 16.1.4 are not defined by code at the present. OSHA has a proposed regulation in relation to indoor air quality standards. It is currently in the review phase. It is not in

16.1.5 FIRE (Interior Finishes and Furnishings)

- * ASTM-E-84-Steiner Tunnel Test.
- * NFAP-701-Standard method of Fire Test for Flame Resistant Textiles and Films.
- * NFPA-705-Field flame Test for Textiles and Films
- * FF 1-70-Standard for the Surface Flammability of Carpet and Rugs (Methenamine Pill Test)
- * NFPA 80-Fire Test of Door and Windows\
- * NFPA 253-Flooring Radiant Panel Test
- * NFPA 258-Research Test method for Determining Smoke Generation of Solid Materials.
- * NFPA 259-Potential Heat of Building Materials
- * NFPA 260 Methods of Tests and Classification System for Cigarette Ignition Resistance of Components
- * NFPA 261- Method of Test for Determining Resistance of Mock-up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes.
- * NFPA 264- A Standard Test Method of Test for Heat Release Rates for Upholstered Furniture Components or Composites and Mattresses Using an Oxygen Consumption Calometer.
- * NFPA 267- Standard on Mattress, subjected to Open Flame Ignition, Using a Large-Scale Oxygen Consumption Calorimeter.
- * UL-1056- Fire Test of Upholstered Furniture
- * TB 133- Flammability Test Procedure For Seating Furniture for Use in Public Occupancies. State of California Bureau Home Furnishings.

* TB 117- (Section A through E) Test Procedures for Testing the Flame Retardance of Resilient Filling Materials used in Upholstered Furniture.

16.2 PROVIDE FURNISHINGS AND EQUIPMENT WITH ANTHROPOMORPHIC FIT AND STABILITY

* ANSI/BIFMA X5.6-86 Standard for office Furnishings.

16.3 PROVIDE GLARE-FREE ILLUMINATION OF WORK SURFACES

* ANSI E-97

16.4 PROVIDE ACCEPTABLE REFLECTANCE LEVELS

* ASTM E-97-IES

16.5 PROVIDE FOR USE AND MAKE ACCESSIBLE TO PHYSICALLY DISABLED

* American Disabilities Act: ASTM 117.1

* Uniform Federal Accessibility Standards

16.6 PROVIDE SAFE AND SWIFT EGRESS FROM INTERIOR SPACES

* International Building Code, BOCA

* NFPA 101 Fire Safety Code-94

* National Building Code, BOCA

* Standard Building Code

* Uniform Building Code, ICBO

16.7 PROVIDE ACOUSTIC CONTROL

* Airborne sound: ASTM C 423, PBS C.1

* Speech Privacy: SPP, Speech Privacy Potential

* Impact sound transmission: ASTM C 423-66, PBS C-2

17 CHECKLIST FOR SID REVIEWS

17.1 GENERAL

The Checklists are used to ensure that SID/CID binders and all contact drawings and specifications are complete and will meet customer approval.

17.2 CHECKLISTS FOR SID BINDERS

The correct organization of the SID Binder is important to ensure a rapid and accurate evaluation of the submittal and to ensure all the information provided in the binders appears in the contract documents. The SID binder shall include the information in the order indicated in

Paragraphs 4 and paragraph 5 Submittal Matrix Summary 1-17.

17.2.1 CHECKLIST FOR SID NARRATIVE

Review the statement of DESIGN OBJECTIVES. Design Objectives are to indicate the proposed building materials, color scheme and the philosophy for the selection each. When applicable the design narrative shall discuss Energy Efficiency, Safety, Maintenance, Durability, Image and Occupant Morale.

17.2 CHECKLIST FOR EXTERIOR COLOR LEGEND AND COLOR BOARDS

Exterior Colors are often dictated by the Installation's Design Guidance. In these instances, the Federal Standard 59533 paint colors may be referenced for factory-finished items. See examples below.

Metal Roof Federal Standard 595b 0000

17.2.2 REVIEW QUESTIONS

1. Are all exterior materials labeled and properly identified?
2. Do all exterior materials and finishes meet standard Installation Design Guidance requirements?
3. Are there any miscellaneous exterior materials and finishes that need to be listed and sampled in the SID Binder OR indicated in Guide Specifications or and indicated on Finish Schedule? Contract drawings?
4. Are all the exterior materials sampled in SID Binder?
5. Are all exterior materials indicated on Finish Schedule sampled in SID Binder?

17.3 CHECKLIST FOR SID INTERIOR COLOR SCHEME AND COLOR BOARDS:

Review the architectural finish samples for an orderly arrangement on 8 1/2" x 11" color boards according to like rooms/areas receiving like finishes.

Each color board will be noted as a COLOR SCHEME. Each Color Board shall consist of a material sample board and a material legend board.

17.3.1 Each Color Scheme shall be properly identified:

[The following information should be on the lower portion of each sheet]

- a. Project title
- b. Location
- c. Date

d. A/E Firm

17.3.2 Each material legend shall have written identification of materials in the order as follows:

1. Alpha Code
2. Material
3. Manufacturer
4. Color name
5. Color Number

The material legend identification shall be consistent with the material legend found in the Exterior and Interior Finish Guide Specification or in the contract drawings. Without exception all rooms and areas shall be identified and their finishes shown.

* The general contractor will not be receiving the SID binders therefore all finishes and their placement must be on the contract drawings or in the Guide Specifications.

17.4 CHECKLIST FOR INTERIOR COLOR SCHEME

17.4.1 SID REVIEW QUESTIONS

COLOR SCHEME

1. What basic color scheme is used?
 - a. Monochromatic
 - b. Analogous plus complement accent
 - c. Complementary
 - d. Split Complementary
 - e. Triadic
2. Is there a basic neutral color for all walls?
3. Does the color scheme create a sense of order?
4. Are accent colors appropriate in hue value and intensity to create interest?
Do they overpower the space?
5. Are Accent Colors clearly indicated on the contract drawings?
6. Are the colors placed to create a "visual balance" throughout the building?
7. Do the Accent colors assist with "pathway finding"?

GENERAL FINISHES

1. Do finishes offer variety in appearance? (soft, hard, smooth, rough, dull, gloss, matte)
2. Do selected finishes enhance the architectural lines of the rough, dull, gloss, matte) building?
3. Are materials, finishes, and colors appropriate for the surfaces they will be covering?
4. Are walls painted [Gloss] [Semi-Gloss] [eggshell]?
(Flat Latex wall paint is not durable for interior walls.)
5. Do the interior finishes reflect and reinforce the appropriate image for the facility?
6. Is the flooring selected for all areas appropriate in color pattern, texture and scale?
7. Does color and pattern in Carpet/Carpet Tile relate to scale and size of room?
8. Will Carpet/ Carpet Tile color and pattern hide soil and wear path?
9. Are window treatments compatible with architectural detailing?
10. Will window treatment and its installation cause unnecessary wear or abrasion?
11. Are finishes selected creative in use and placement?
12. Will there be acoustical problems because of the materials selected? (A balance of Reflective and Absorptive surfaces is necessary)
13. Will all colors, materials, and finishes retain their appearance long-term?
14. Are all interior finishes labeled and properly identified?
15. Do all interior finishes meet standard codes requirements?
16. Are there any miscellaneous interior finishes and materials that need to be listed, sampled and specified?

17. Are all interior materials sampled in SID Binder listed on the Finish Schedule?

18. Are all materials listed on the Finish Schedule sampled in the SID Binder?

19. Are there any treatments such as bordered carpets, or multi-color ceramic tile borders that need to be illustrated in plans but are not?

20. Are all SID finishes specified according to the quality to ensure quality and performance?

PREWIRED WORKSTATIONS

1. Do the prewired workstations and specifications coordinate to fully cover all the information required for bidding, and installation of the product?

2. Have all the required contract drawings as indicated in paragraph of the Submittal Summary Matrix been provided?

17.4.2 CHECKLIST FOR SAFETY:

Do all finishes selected shall meet code requirements and are appropriate in color, texture, and pattern to insure the well being of the inhabitants?

17.4.3 FACILITY SIGNAGE REVIEW QUESTIONS

1. Is the signage listed on a separate plan and indicated correctly in the specifications?

2. What typeface is specified? Does it meet approved standards?

3. Is Symbol Signage used in lieu of Printed identification for restrooms?

4. Are Signs flexible so that names and rooms can be changed easily?

5. Are Signage colors and samples in the SID?

For additional reference on signage refer to Sign Standards relative to the Department of Defense.

18.5 CHECKLIST FOR CID BINDER LAYOUT

The CID Binder is the most detailed of all binders submitted because of the numerous components specified, priced, and illustrated. The correct organization of

the CID Binder is important to insure a rapid and accurate review of the building's furniture components and their relationship to the architecture and its finishes. The CID Binder shall include the information in the order indicated in paragraph 5 Submittal Matrix Summary items 18-31.

18.5.1 CHECKLIST FOR CID NARRATIVE: Review the statement of DESIGN OBJECTIVES explaining the CID interior design philosophy of the facility. Design Objectives and the proposed method of accomplishing the objectives shall cover, when applicable, the furnishings and their relationship to the building and it's inhabitants, energy, efficiency, safety, health, maintenance, image, personal performance of occupants and functional flexibility.

18.5.2 CID REVIEW QUESTIONS

1. Does the layout of the CID Binder follow the TABLE OF CONTENTS format indicated in paragraph 4.7 and 5?
2. Are all pages properly identified?
3. Are all samples labeled and identified?
4. Are there any miscellaneous components shown on the Footprint Plan that are not shown in the CID Binder?
5. Are there any miscellaneous components shown in the CID Binder that are not reflected on the FURNITURE PLACEMENT PLANS?

CHAIRS

1. Is the chair appropriate for the task?
2. Is the style of the chair in keeping with the overall theme of the building and other components selected?
3. Is the chair scaled correctly for the space it occupies?
4. Are chair costs appropriate for the project?(ERGO \$300-350)
5. Is the finish of the chair interesting and in harmony with the elements surrounding it?

6. Are all chairs listed on the composite Footprint Plan, Furniture Placement Plans, Illustration Sheets, Location Code and Order Forms?

DESK

1. Is the desk appropriate for the task?
2. Is the style of the desk in keeping with the overall theme of the building and other components selected?
3. Is the desk too large for the space it occupies?
4. Are the desk costs appropriate for the project?
5. Is the finish of the desk interesting and in harmony with the elements surrounding it?
6. Are all desks listed on the composite Footprint Plan, Furniture Placement Plan, Location Code and Cost Estimate, Furniture Illustration Sheet, and Order Form?

COST ESTIMATES and ORDER FORMS

1. Are cost estimates correct?
2. Are Order Forms completed and accurate?

18.5.3 CHECKLIST FOR SAFETY

1. In the placement of furniture, is emergency egress considered?
2. In the placement of furniture, is consideration given to the requirements for the handicapped. (Reference: Uniform Federal Accessibility Standards and ADA).

19. LESSONS LEARNED

Lessons Learned are for information only and to eliminate lost effort in the development of SID/CID submittals. Lessons learned are from both Air Force and Army projects.

Experience has taught that generally neutral interior environments with color accents used appropriately in SID finishes and all CID finishes provide the best

"look" for a government facility. The common sense approach to all projects is the most cost effective way to achieve customer satisfaction.

Interior Design Solutions are important to the treatment and housing of all personnel. If leaders expect excellence in people, the environment in which they are housed should not be created on a whim or by individuals not technically educated and experienced in creating such environments.

Although interior environments cannot motivate people to excel they can provide a background that creates a functional opportunity for them to excel.

The Savannah District considers a quality interior design environment to be one that meets the followings ten (10) objectives:

1. Complete Coordination between contract drawings and specifications. The lack thereof is a potential source of liability.
2. The use of durable, easily maintained finishes that support "good housekeeping".
3. Appropriate use of accents colors that are easy to "live with" and cost effectively removed when updating the "look".
4. Spaces that are planned to support life safety.
5. Spaces that meet the functional needs of the user. Maximize flexibility for future change in both SID and CID plans.
6. Furnishing selected that support personal performance and personal health.
7. Appropriate use of all the design elements (Landscape, Architecture and Interior Design) to support "path-way finding" "up to" and within the facility.
8. Accurate documentation of all the contract documents (SID) and procurement documents (CID).
9. Finishes and furniture selected that meet government procurement regulations.
10. Customer satisfaction.

19.1 EXTERIOR FINISHES

1. Exterior SID: The Exterior building finish materials, colors and signage shall be in accordance with the Master Plan/Installation Design Guide of the installation on which the project is being constructed.
2. Verify with each installation what their current standard exterior finishes are.
3. Use the Federal Standard Number 595B to indicate the range of exterior finish colors.

19.2 INTERIOR DESIGN PHILOSOPHY

1. Interiors building finishes, furnishings and colors schemes are to be appropriate and support the function of the facility.
2. Interior design objectives are to create an environment that enhances public image, employee morale, provide building finishes that are durable, easy to clean, cost effective to maintain and support life safety.
3. Appropriate accent colors are easy to "live with" and can be easy and cost effectively removed when updating the "look" is the objective.
4. Accurate documentation of finishes and furnishings in both the SID and the CID.
5. Talk to the customer. Let them know what you are planning before you submit the color boards. Do more in-process design and review communication with the customer before formal submittals.
6. Generally the exterior color scheme should transition and continue into the interior color scheme.

19.3 INTERIOR FINISHES

1. Non-slip surfaces at entryway
2. Semi-gloss for trim only
3. Egg-shell finish for walls if possible.

19.4 INTERIOR COLORS

1. A neutral warm or cool color palette with accent colors used in furnishings has generally been the most successful for most interior projects.
2. Colors in a mid-tone range used for door trim and matching base is generally approved.
3. Light colored carpets shows soil easily and will be disapproved.
3. Painted doors, trim and walls to blend (do not use extreme contrast colors for doors and walls).
5. Because the general contractor can substitute colors, textures and patterns during the construction process "permanent interior building finishes" are most successful if they are neutral colors.

The most typical finishes substituted during construction are: Plastic laminates, vinyl wall coverings, ceramic tile, toilet partitions, wood stains.

19.5 ACCENT COLORS

1. Ceramic tile accent borders on floors and walls in restrooms (one or two colors on a neutral field.)
2. Multi-colored graphic pattern carpet with solid or fleck colors used as accent borders.
3. Accent vinyl wall covering colors used a visual "pathway finding" guide through a facility.
4. Colorful fabrics with small pattern designs used on guest chairs.

19.6 WALL COVERING

1. Use Type II for all areas. Type III only in heavy use corridors. The additional satin resistant coatings used for health care environments.
2. The architect is to design walls with a correct vapor barrier. Wall covering can be used on both exterior and interior perimeter walls.
3. Must meet NFPA Class A Flame Spread rating.

4. Use chair rail when walls are subject to frequent furniture movement and scarring. eg. Conference rooms and waiting areas.
5. Fabric wall covering can only be used in a sprinkled building according to NFPA.

19.7 CARPET

1. Primary interior finish and should be the bases for the overall color scheme.
2. Graphic Patterns with random pattern is the best. Avoid large geometric or rigid patterns. They look askew if adjacent to a wall that is not plumb,
3. Avoid bright or light colors which soil easily.
4. Carpet tile is recommended when power and communications are installed in floor raceways.
5. Carpet tile is best for corridors: use patterned fields and solid-colored borders for "pathway finding".

19.8 SIGNAGE

1. Use the Installations' Design Guidance or the appropriate design guide for the Department of Defense agency.
2. Coordinate the signage color with the interiors color scheme.
3. Specify a flexible sign that allows for easy personnel name change or room name change.
4. Signage changes. It is helpful when ordering additional signage that signage specified be on a GSA schedule.
5. Bulletin Boards and fire exit plans are to be included in facility signage package.

19.9 UPHOLSTERY

1. Tweeds and small-scaled patterns retain their appearance longer.
2. Avoid solid colors because they show dirt, lint and fade faster than patterns and tweeds.

3. Vinyl's are used for wet areas such as labs.
4. Avoid vinyl fabrics in administrative areas or for general use seating.
5. Leather seating is used for only high-ranking officers and directors.
6. Use Nylon and Nylon blends seating fabrics that are easy to maintain.

19.10 FURNITURE

1. Black and wood veneer horizontal surfaces are discouraged in general public use areas. A plastic laminate table surface in public areas retains its appearance longer.
2. Mid-tone range colors for work surfaces are recommended because it will not add to eye fatigue. Light oaks, beige, and grays work best.
3. Black finishes are discouraged for case goods because it is a housekeeping problem.
4. Oak is an acceptable color range for woods and laminated wood surfaces and frames. Darker woods are traditionally accepted for those of higher rank.
5. Use commercial grade, performance tested GSA contracts.
6. Laminate tops are recommended for all work surfaces other than executive suite areas (wood veneer may be used).
7. Systems furniture plans require Air Force HQ Interior Design Review and approval.
8. Acoustical panels over 65" in height may restrict light and air distribution. 62-64" high panels are generally the best.
9. Fabric finishes on flipper doors will not be approved.

19.11 ARTWORK

1. Only use in public areas; not in private personnel offices.
2. Use to assist occupants in "pathway finding"

3. Hang artwork at 5'-6" with security type devices.
4. Choose mats and frames, which complement other accessories and interior color scheme.
- 5 . Art should be large enough to fill the space.

19.12 PLANTS AND ACCESSORIES

1. Plants help soften the space.
2. Do not specify live plants. This type of specification requires a maintenance contract.
3. Use quality artificial plants such as with real trucks, bark etc.
4. Specify sturdy containers. Limit the use of wicker baskets.

19.13 Window Treatments

1. Use doubled return hems and doubled bottom hems.
2. Draperies are not encouraged in areas other than executive suites and living areas.
3. Mini blinds that match the window frame are recommended for admin space.
4. Vertical blinds are accepted and can have a fabric inserts. Do not specify any fabric vertical blinds without using a PVC insert vane.
5. Specify blackout lining in sleeping areas
6. Fabric valances may be used over mini blinds
7. Use decorative rods or top treatments to give draperies a finished appearance.
8. Draperies are to be 2.5 fullness.
9. Ripple fold over pinched pleats recommended.

10. Draperies are to have minimum 4-inch returns and 2 inch overlaps with a 4-inch heading. Weighted at the corners and all seams.

19.14 BEDSPREADS

1. Use a fitted style bedspread.
2. Pattern is recommended.
3. Minimum 5 oz 100% polyester fill
4. Fabric must have dimensional stability with less than 2% shrinkage after washing at 160 F degrees.

19.15 THE DISTINGUISHING CHARACTERISTICS OF SUCCESSFUL INTERIORS

The Savannah District holds firmly to the position that a successful interior design solution consistently incorporates typical finishes, colors and features to obtain quality interior design solutions. The following guidelines shall be the basis from which all projects will be reviewed and judged for their success.

When planning for the interior environment emphases of one from each of the following groups will hopefully achieve good design:

1. Architectural Emphasis or Component Emphasis
2. Color System in Contrast or Color System in Continuity
3. Directional Reinforcement OF Directional Change
4. Value Contrast or Value similarity
5. Surface/Texture Emphases or Surface Pattern Emphasis
6. Contemporary/Traditional Emphases or Eclectic Emphasis

Interior SID: Permanent interior building finishes are to be neutral in color. "Permanent finishes" are considered:

1. Plastic Laminates
2. Vinyl Composition Tile

3. Ceramic Tile or other hard tiles
4. Wood doors (stained wood finish)
5. Metal Doors and Metal Trim
6. Toilet Partitions
7. The majority of walls and ceilings.

The appropriate placement of accent hues and patterns for a Government project are considered to be:

1. Accent borders on floors and walls in restrooms.
2. Multi-colored graphic patterned carpet used throughout the facility.
3. Accent colors on vertical surfaces used as visual assistant in "path wayfinding"
4. Artwork
5. Upholstery fabric

Although cost constraints can limit complex design details throughout the facility, there are areas where cost effective use of accents hues and identifying architectural features should be considered and used to create an image. The following areas are ranked according to importance:

1. Lobby Areas
2. Main Conference rooms
3. Command Areas
4. Employee Break rooms and Toilet Rooms
5. General Office Areas

Successful "Path wayfinding" is achieved when users and visitors easily find their way "up to" a building and throughout its interiors. The District's position is that "path wayfinding" can successfully be obtained by incorporating reason and experience offered by a multi-disciplined team of the Landscape Architect, the Architect and the Interior Designer.

20. SID/CID ILLUSTRATIONS

30% STRUCTURAL INTERIOR DESIGN

FY – 2003

UEPH DORMS

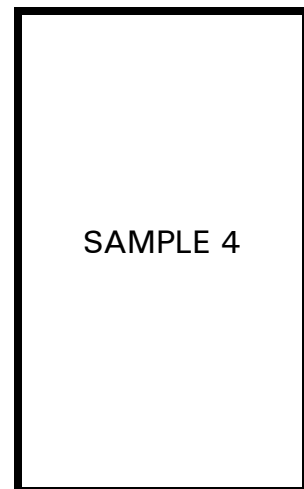
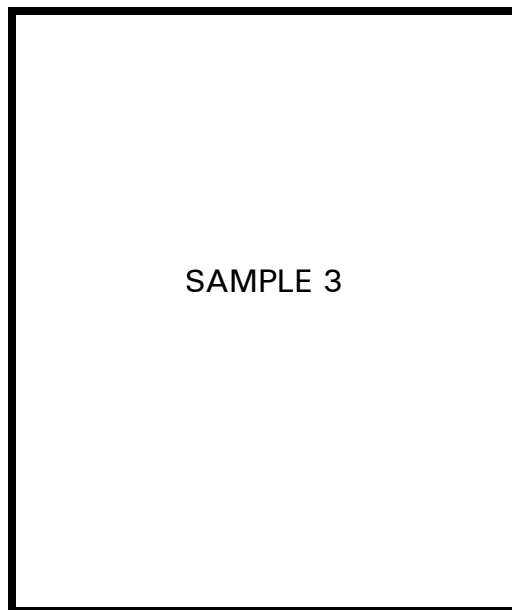
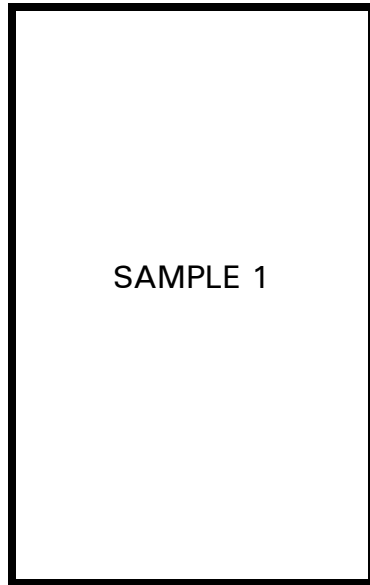
ENGLIN AIR FORCE BASE
FLORIDA

U.S. ARMY CORP OF ENGINEERS
MOBILE DISTRICT
MOBILE, ALABAMA
APRIL 1994

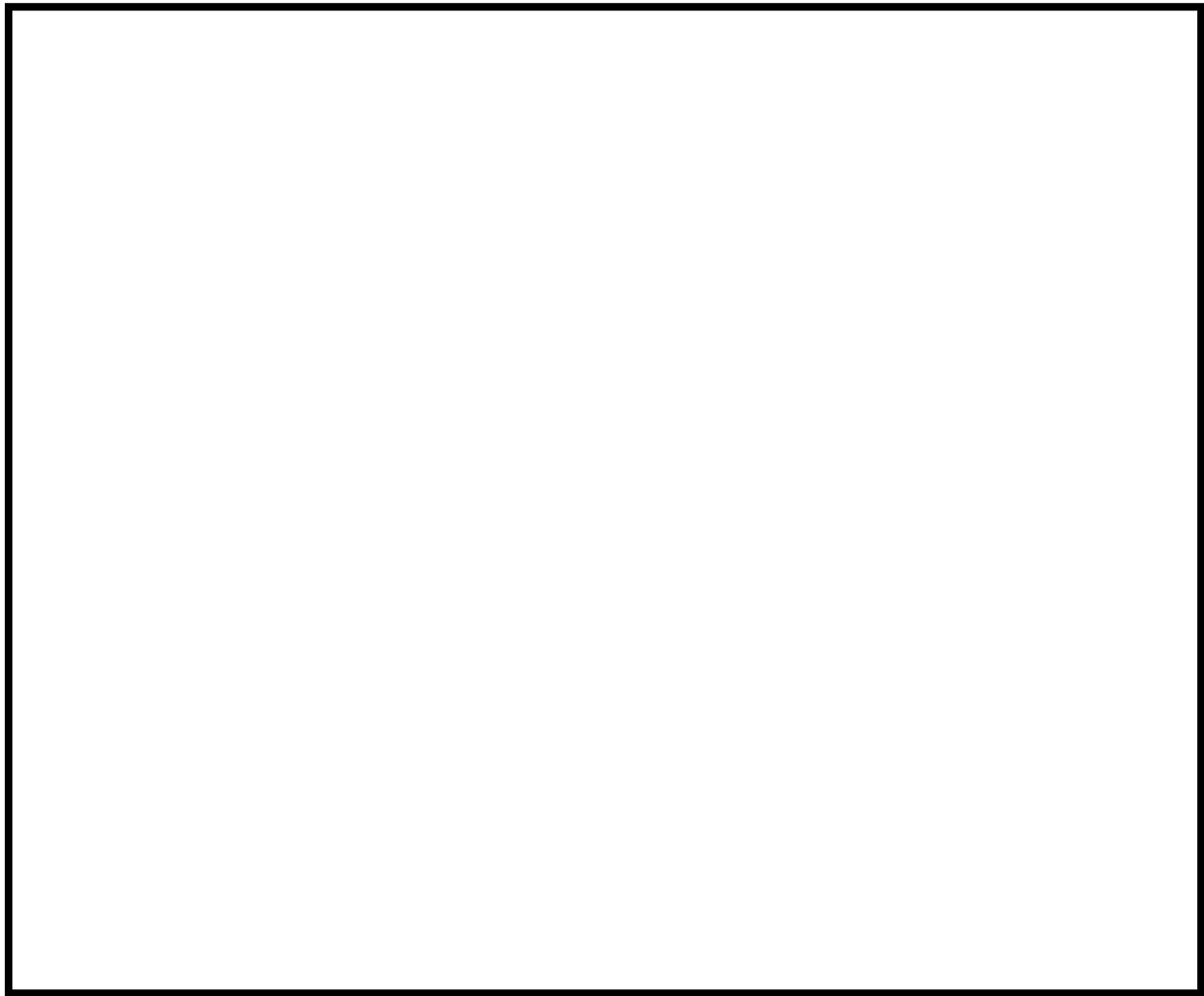
Building Exterior Elevation

1. SMOOTH FACE BLOCK LIGHT TAN
2. GLACING, PPG, SOLARBRONZE TINT
3. META, RCSF, FEDERAL STANDARD 595B 000000
4. METAL GURRER, FEDERAL STANDARD 595B 000000

EXTERIOR MATERIAL SAMPLES



FLOOR PLAN OF BUILDING



COLOR SCHEME "A"- GENERAL OFFICE AREAS
COLOR SCHEME "B" TOILET ROOMS
COLOR SCHEME "C" MISCELLANEOUS AREAS

FIRM	INTERIOR COLOR PLACEMENT	PROJECT NAME
DATE		LOCATION

INTERIOR COLOR BOARDS

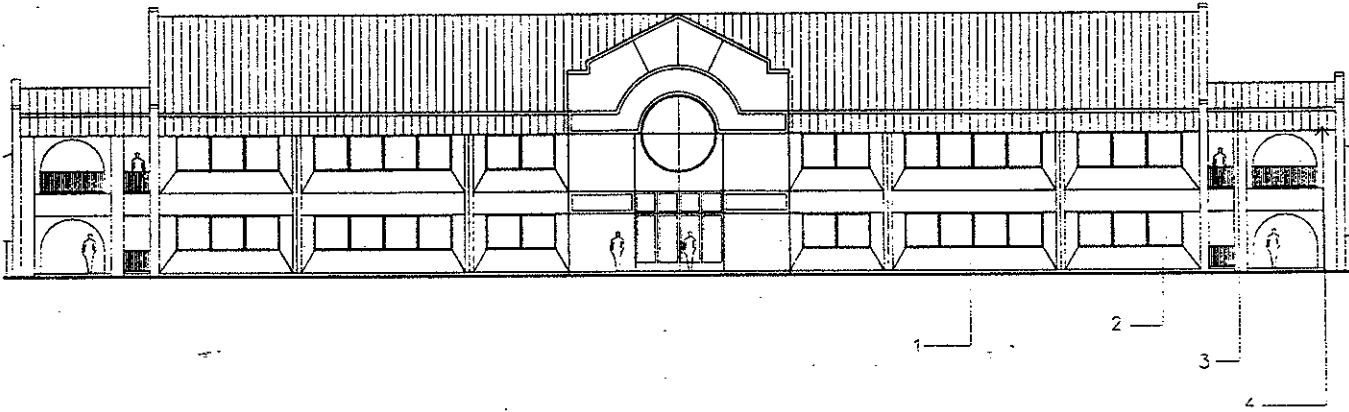
FIRM

INTERIOR COLOR BOARD

PROJECT NAME

DATE

LOCATION

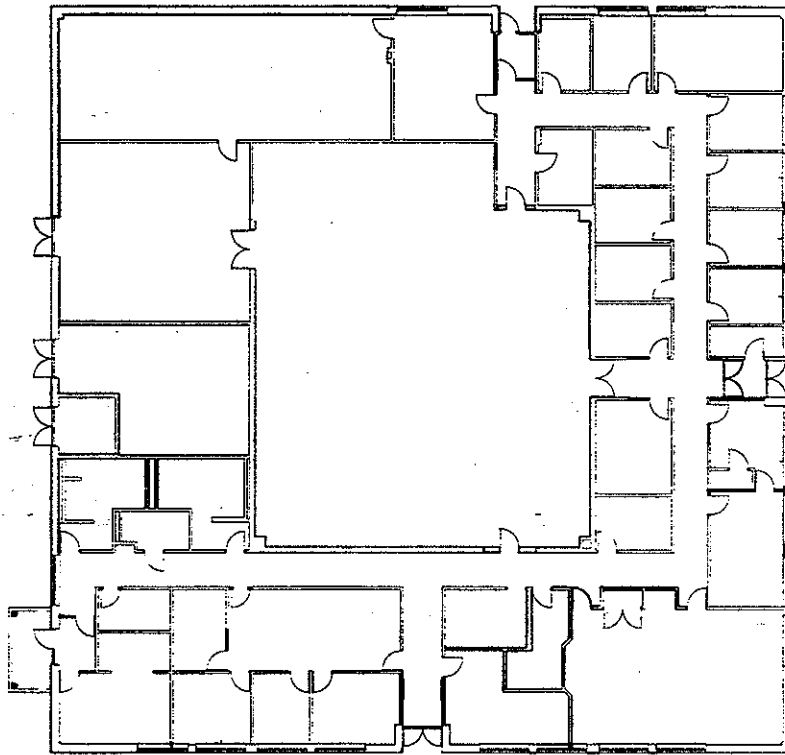


1. SMOOTH FACE BLOCK, LT. TAN
2. GLAZING, PPC, SOLARBRONZE TINT
3. METAL ROOF, FEDERAL STANDARD 595B 000000
4. METAL GUTTER, FEDERAL STANDARD 595B 000000

FRW
DATE

EXTERIOR ELEVATIONS

PROJECT NAME
LOCATION



COLOR SCHEME "A"- GENERAL OFFICE AREAS

COLOR SCHEME "B" TOILET ROOMS

COLOR SCHEME "C" MISCELLANEOUS AREAS

FIRM
DATE

INTERIOR COLOR PLACEMENT

PROJECT NAME
LOCATION

INTERIOR COLOR BOARDS

FRW

DATE

PROJECT NAME

LOCATION

SAMPLE

FIELD

ACCENT

CT-1

CT-2

SAMPLE

GROUT-1

SAMPLE

CT-3

FLOOR TILE

SAMPLE

P-2
CEILING

SAMPLE

TP-1
PL-1

FIRM
DATE

COLOR SCHEME "C"

PROJECT NAME
LOCATION

CT-1: CERAMIC TILE, AMERICAN OLEAN, 153 ALMOND. 4" X 4"

CT-2: CERAMIC TILE, AMERICAN OLEN, 2" X 2" TEAL

CT-3: CERAMIC TILE, AMERICAN OLEN, 2" X 2" A 20 BEACH TAN

GROUT-1: AMERICAN OLEAN, BROWN

P-2: EPOXY PAINT, WHITE (FOR CEILINGS)

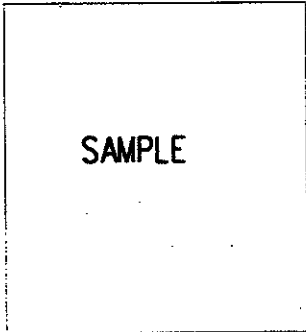
PL-1: PLASTIC LAMINATE, WILSONART, ALMOND, 513 COUNTER TOPS

TP-1: PLASTIC LAMINATE, WILSONART, ALMOND 513 TOILET PARTITIONS

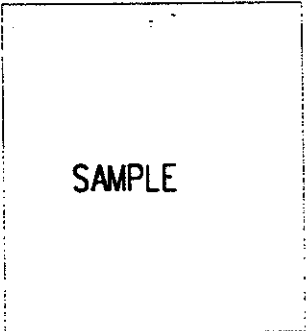
FIRM
DATE

COLOR SCHEME "C"

PROJECT NAME
LOCATION

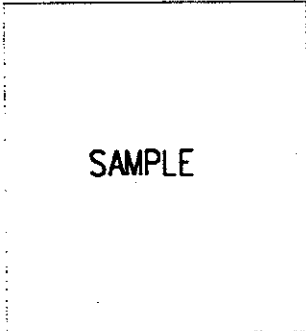


APCO WHITE (PLAQUE HOLDER)



LETTERING

APCO BLACK



APCO CLEAR (INSERT)

FIRM
DATE

SIGNAGE

PROJECT NAME
LOCATION

XYZ SYSTEMS MFG.

SAMPLE

PANELS FABRIC
466 TAN

SAMPLE

TACKBOARD
033 TEAL

SAMPLE

FLIPPER DOOR AND TRIM
PUTTY

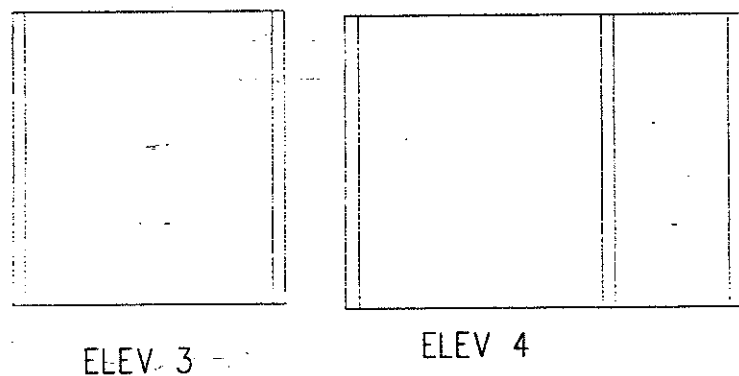
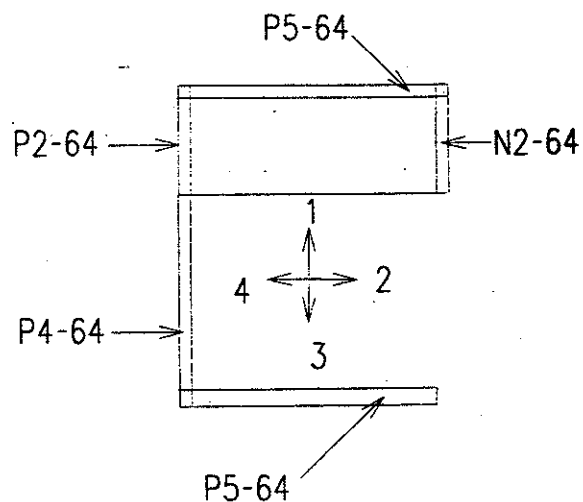
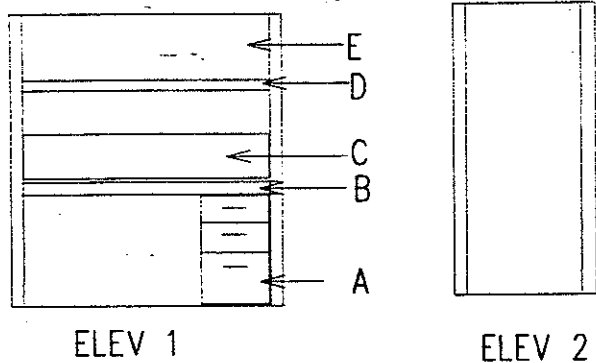
COMPONENTS

WORKSURFACES

FIRM
DATE

PREWIRED WORKSTATION COLOR BOARD

PROJECT NAME
LOCATION



QTY.	CODE	DESCRIPTION
2	P5-64	2' W X 64"H POWERED ACOUSTICAL PANEL
1	N2-64	2'W X 64"H NON-POWERED ACOUSTICAL PANEL
1	A	3", 3", 12" DRAWER PEDESTAL
1	B	23"D X 60" W HANGING WORK SURFACE

10 EACH TYPICAL "A"

FIRM
DATE

PREWIRED WORKSTATION
TYPICAL "A"

LOCATION

INSERT CONTRACT DRAWINGS OF:

FLOOR PLANS

FINISH SCHEDULE

SIGNAGE PLAN

PREWIRED WORKSTATIONS DRAWINGS

FIRM

DATE

PROJECT NAME

LOCATION

100%

COMPREHENSIVE INTERIOR DESIGN

FY-95

UEPH DORMS

EGLIN AIR FORCE BASE
FLORIDA

U.S. ARMY CORPS OF ENGINEERS

MOBILE DISTRICT

MOBILE, ALABAMA

APRIL 1994

MANUFACTURER ABC
109 MAIN STREET
ANYWHERE, USA 00000
POINT OF CONTACT:
1-800-000-0000

MANUFACTURER XYZ
109 MAIN STREET
ANYWHERE, USA 00000
POINT OF CONTACT:
1-800-000-0000

MANUFACTURER XXX
109 MAIN STREET
ANYWHERE, USA 00000
POINT OF CONTACT:
1-800-000-0000

FIRM
DATE

MANUFACTURER'S SUMMARY SHEET

PROJECT NAME
LOCATION

INSERT COMPOSITE FURNITURE PLANS

FIRM
DATE

PROJECT NAME
LOCATION

A- ACCESSORIES

B- BOOKCASES

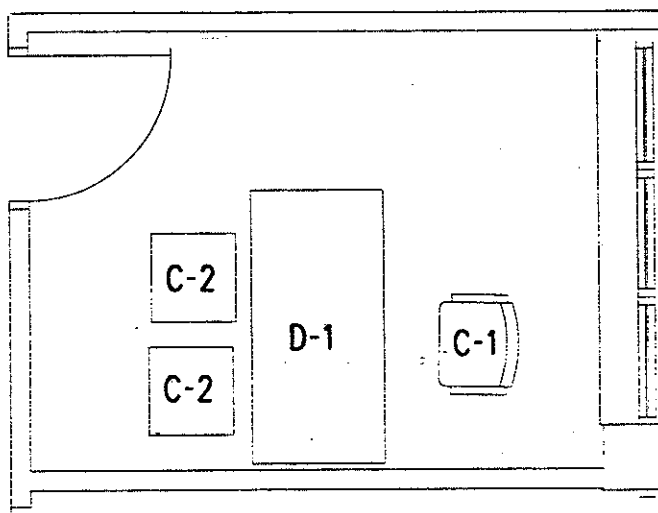
C- CHAIRS

D- DESKS

FIRM
DATE

LOCATION CODE INDEX

PROJECT NAME
LOCATION



ROOM:123

QTY. LOCATION CODE

DESCRIPTION

1 EA. C-1 KNOLL BULL DOG , BLACK FRAME, COLOR: TEAL

2 EA. C-2 KRUGER, "VERSA" BLACK FRAME, TEAL

1 EA. D-1: XYZ , WOOD: WALNUT

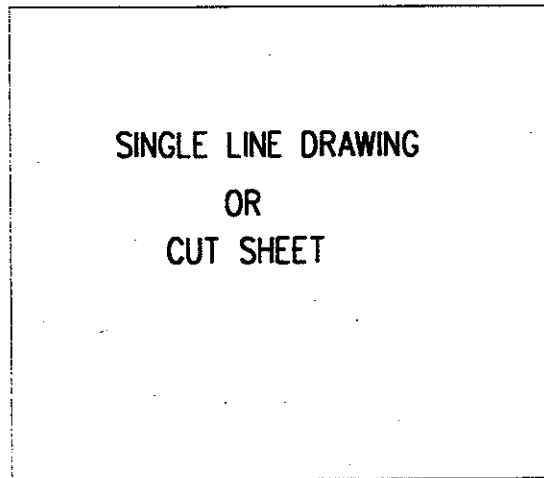
FIRM
DATE

FURNITURE PLACEMENT PLAN

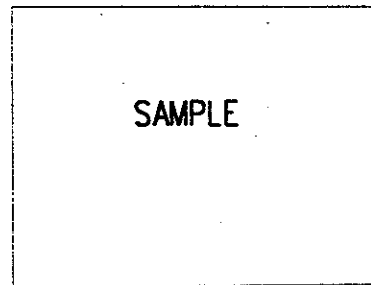
PROJECT NAME
LOCATION

FURNITURE ILLUSTRATION.

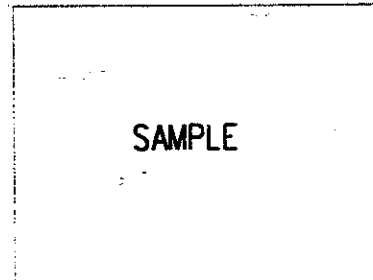
C-2



FABRIC:
002 BLUE



FRAME
BLACK



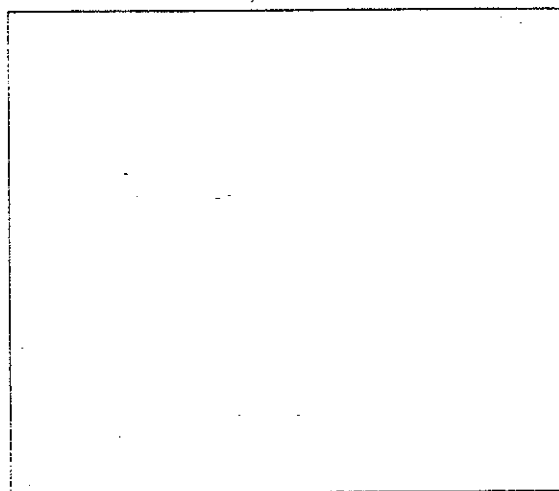
ROOM	QTY	TOTALS
123	2	8
124	2	
125	2	
126	2	

FIRM
DATE

FURNITURE ILLUSTRATION SHEET

PROJECT NAME
LOCATION

ARTWORK ILLUSTRATION

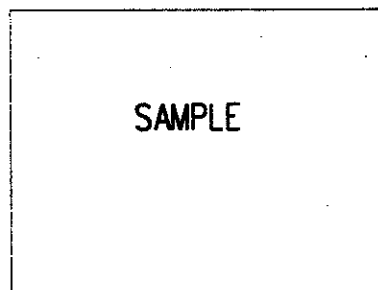


A-1

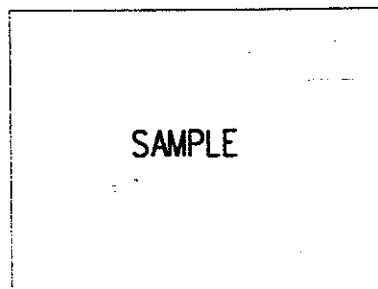
MAT
002 BLUE

FRAME
BLACK

A-1



SAMPLE



SAMPLE

MOUNTING INSTRUCTIONS:

PLACE CENTER OF WALL WITH TOP OF FRAME 64"
ABOVE THE FINISHED FLOOR

ROOM	QTY	TOTALS
123	1	1

FIRM
DATE

ART ILLUSTRATION SHEET

PROJECT NAME
LOCATION

SOURCE: FSC GROUP 71, PART X CONFERENCE TABLES

CODE	MFG.	ITEM	QT.	UNIT PRICE	TOTAL
T-1	KRUGER	TABLE	04	\$ 350.00	1,400.00
T-2	KRUGER	TABLE	01	\$ 350.00	350.00
T-3	KRUGER	TABLE	04	\$ 350.00	1,400.00
TOTAL: \$5,4350.00					

T-5	VECTA	TABLE	04	\$1,000.00	\$4,000.00
T-6	VECTA	TABLE	04	\$1,000.00	\$4,000.00
TOTAL: \$8,000.00					

TOTAL OF ALL CID SOURCES:

10% CONTINGENCY:

7% INSTALLATION:

MISCELLANEOUS FEES:

GRAND TOTAL:

FIRM
DATE

COST ESTIMATE

PROJECT NAME
LOCATION

FURNITURE ORDER FORM SAMPLE
PROJECT TITLE

1. LOCATION CODE:	
2. DIRECTORATE:	
4. DEPARTMENT	
5. ACTIVITY:	
6. FSC GROUP: 71 PART III SECTION: L CLASS 7110 SIN 499-1 CONTRACT EXPIRATION DATE: MOL:	
7. SOURCE: Manufacturer's name etc....	
8. PRODUCT NAME:	
9. PRODUCT STOCK NUMBER:	
10. PRODUCT FABRIC NAME AND COLOR NUMBER:	
11. PRODUCT FINISH NAME AND COLOR NUMBER:	
12. DIMENSIONS:	WEIGHT:
13. DESCRIPTION: (Include construction information; fabric content, finish application)	
14. JUSTIFICATION: These guest chairs are coordinated to match the tasks seating at each workstation. The size of the guest chair was critical because of the limited space where they were to be placed. If this company is not selected coordinate the newly proposed finishes with Location Codes: C3, C4 and C5.	
15. ROOM LOCATION	QUANTITY PER ROOM
16. TOTAL QUANTITY:	
17. UNIT PRICE:	
18. TOTAL PRICE:	
19. FREIGHT CHARGES: FOB DESTINATION (Note if freight charges are included in the price of the CID item.)	
20. Additional remarks or justification.	

21. APPENDICES

A. ADA REQUIREMENTS

B. COMMANDER'S POLICY

C. UNICOR WAIVER

02/08/94

04:41

202 272 8813

HQ USACE(CEMP-E) ---- CESP-K-ED-T

008/011



DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CEMP-EA/CECW-EP

25 JAN 1994

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Access for People with Disabilities

1. Reference Secretary of Defense memorandum dated 20 October 1993, subject as above (enclosure 1).

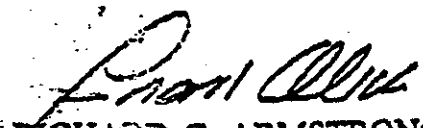
2. In accordance with the referenced memorandum, the Department of Defense (DoD) has implemented a new policy concerning accessibility standards. In the past, USACE was required to meet the requirements of the Uniform Federal Accessibility Standards (UFAS) and not the Americans with Disabilities Act Accessibility Guidelines (ADAAG). The new policy requires that, in addition to meeting UFAS requirements as required by 42 U.S.C. 4151-4157 and consistent with 29 U.S.C. 794, the requirements of the ADAAG that provide equal or greater accessibility than the requirements of the UFAS must also be met in those facilities subject to UFAS. The facilities excluded under UFAS (such as unaccompanied personnel housing) are still excluded under this new policy, even though the ADAAG has no such exclusions. The implementation of this new policy is considered to have *routine application* as defined by ER 1110-345-100.


3. Copies of UFAS and ADAAG criteria are available from the Architectural and Transportation Barriers Compliance Board, telephone (202) 272-5434. Copies of the Title II Technical Assistance Manual which explains differences between the two standards are available from the Department of Justice, (202) 514-0301.

4. The Directorate of Military Programs POC is Mr. D. S. Gim, CEMP-EA, (202) 272-0440, and the Directorate of Civil Works POC is Mr. Douglas J. Kamien, CECW-EP, (202) 272-8894.

FOR THE DIRECTORS OF MILITARY PROGRAMS AND CIVIL WORKS:

Encl


RICHARD C. ARMSTRONG, P.E.
Chief, Engineering Division
Directorate of Military Programs


PAUL D. BARBER, P.E.
Chief, Engineering Division
Directorate of Civil Works



DEPARTMENT OF THE ARMY

U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000REPLY TO
ATTENTION OF:

CEMP-EA

31 MAR 1993

COMMANDER'S POLICY MEMORANDUM #7

SUBJECT: Comprehensive Interior Designs

1. The Vice Chief of Staff, Army has placed priority on providing quality living conditions for our soldiers wherever stationed. While this initial thrust to improve the quality of interior environments is directed at barracks facilities, my overall concern is that we ensure quality interior living, working, and training conditions for all of our customers.
2. In order for the Army and our other customers to recruit and retain dedicated career professionals, excellent environments are needed to provide a high quality of life. Our customers and our own personnel spend a majority of their time in interior environments. Excellence in building interiors and furnishings is critical in meeting our customer's and our own functional and operations requirements. Excellent comprehensive interior design must be given high priority in the planning, programming, design, and implementation of our construction projects.

A handwritten signature in cursive script, reading "Arthur E. Williams", is positioned above the typed name.

ARTHUR E. WILLIAMS
Lieutenant General, USA
Commanding

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, DC 20314-1000

ER 1110-345-122

CEMP-EA

Regulation
No. 1110-345-122

15 April 1994

**Engineering and Design
INTERIOR DESIGN**

1. **Purpose.** This regulation establishes policy, requirements, and responsibilities to be followed in the planning, design, approval, and procurement of interior designs for military construction projects and improvement programs.

2. **Applicability.** This regulation applies to HQUSACE/OCE elements, major subordinate commands (MSC), district commands and technical centers, laboratories, and field operating activities (FOA) having military construction (MILCON) responsibilities.

3. **References.** References and additional information resources are listed at Appendix A.

4. **Projects Requiring Interior Design.** Interior design is required on all new building construction and renovation projects regardless of funding source. Interior design guidance for most facility types is provided by Design Guide (DG) 1110-3-122. Interior design guidance for medical facilities is furnished by Architectural and Engineering Instructions, Medical Design Standards. Interior design for family housing will be in accordance with Architectural and Engineering Instructions, Army Family Housing.

5. **Interior Design Services.** Two types of interior design services are offered.

a. **Building-Related Interior Design.** Building-related interior design service will be provided for all facilities. This service requires the accommodation of needed furniture and equipment within the building, and the design or selection of items normally provided as part of the building construction project in accordance with AR 415-15. These services will be provided as an integral part of the project design and shall include:

(1) Basic space planning for anticipated furniture and equipment requirements in conjunction with the functional layout of the building design and such requirements as life safety, privacy, lighting, ventilation, and accessibility.

(2) Design, selection, and coordination of surface materials and colors that are applied to or compose walls, floors, ceilings, trims, doors, windows, window treatments, built-in furniture and installed building equipment, lighting, signage and other items which are permanently attached to, or are integral to the building. Appendix B further defines interior design elements that are building-related and furniture-related.

b. **Furniture-Related Interior Design.** Furniture-related interior design should be provided for all facilities where the arrangement of furniture and furnishings is important to building functionality. Furniture-related interior design services relate to the accommodation and selection of items that will be provided or procured by the Government. This service will be provided when requested by the using activity and will normally include:

(1) Selection, and color coordination of furniture and equipment drawn from existing inventory, procured from Government supply sources (see Appendix C), or procured by competitive bid. These items normally include such things as ergonomic chairs, freestanding and mobile furniture, draperies, lamps, rugs, plant materials, planters, and free standing or wall hung art.

(2) Detailed space design, placement planning, and procurement documentation for the selected furniture, furnishings, and equipment.

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(3) Coordination of furniture-related items with the building design.

6. General Requirements.

a. Building-Related Interior Design. General requirements for building-related interior design are as follows:

(1) Preparation of the basic space layout plans for furniture and equipment, in coordination with the functional layout of the building design.

(2) Specification of the material and color applications for interior component surfaces, and preparation of color and finish schedules.

(3) Design and specification of permanent features such as signage, graphics, casework, and built-in equipment; and the preparation of appropriate schedules.

(4) Coordination of finishes, interior components, lighting, acoustical treatment, electrical, information systems, and mechanical elements.

(5) Preparation of display books or boards showing layout diagrams, special details, and material and color samples, for the purpose of obtaining approval of the design scheme and for facilitating the execution of the design intent through the construction contract or other procurement.

(6) Description of interior design intentions for enhancement of energy efficiency, safety, health, functional flexibility, maintenance, increased personnel performance, and projecting the proper image.

b. Furniture-Related Interior Design. General requirements for furniture-related interior design are:

(1) Coordination with all the tasks identified in paragraph 6a above, so that the furniture-related and building-related design schemes reflect a single, coordinated design theme.

(2) Selection and description of furniture and equipment from available Government sources of supply (see Appendix C). Selection will be based on factors indicated in DG 1110-3-122. When

Government source items do not meet requirements, purchase specifications to include materials testing and/or rating requirements to meet minimum Federal standards, and any other data necessary for procurement on the open market will be provided.

(3) Preparation of detailed furniture arrangement and placement plans, and coordination with electrical, information systems, and mechanical elements.

(4) Preparation of procurement documents with source data, item identification, color and finish schedules, and cost estimates. Documents will reflect current source data for procurement.

(5) Preparation of display books or boards showing layout diagrams, selected furniture and equipment, material and color samples. Perspectives or sketches may also be necessary to obtaining approval of the design scheme.

(6) Technical consultation during procurement, delivery, and placement, to assure receipt of specified and selected items, and completion and coordination of the overall design scheme.

7. Design Requirements. Preparation of project interior designs will coincide with the project design process described in AR 415-15. An interior design analysis will be prepared as part of the project design analysis required by ER 1110-345-700. Interior design drawings will likewise be prepared as part of the project drawings required by ER 1110-345-710.

a. Concept Design. During the concept design phase, those responsible for interior design will meet with representatives of the using activity and the building design team to determine the design concept. The design concept should meet the users functional, physical, and aesthetic needs as defined below.

(1) Functional. Achieve space planning layout which considers all furniture and equipment required to support the users operation. Related design issues include accessibility, privacy, safety, and health.

(2) Physical. Assure that environmental support systems such as electrical, lighting, mechanical,

ER 1110-345-122

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information systems, and structure meet the users physical requirements.

(3) Aesthetic. Meet the users needs for aesthetic expression. Aesthetic needs are the physical interpretations of the users sociological and psychological needs. Design issues related to these needs include the use of light, color, and texture.

b. Final Design. Upon approval of the concept design, those responsible for design will develop the design concept in sufficient detail to assure successful execution. Building-related interior design is the detailed design and specification of building-related elements in the contract documents. Furniture-related interior design includes the detailed design and preparation of procurement documents.

8. Responsibilities.

a. Planning Phase.

(1) The using activity and installation will:

(a) Provide design and design review funds for furniture-related design, as indicated in paragraphs 10 and 11 of this regulation.

(b) Provide funds for procurement of furniture and equipment, and indicate these funds on DD Form 1391, as required by AR 415-15.

(c) Identify unique functional requirements related to the interior design of the facility.

(d) Identify existing furniture and equipment to be reused in addition to new furniture and equipment required.

(2) USACE MSC and district commands responsible for design will assist, on a reimbursable basis, in determining preliminary design requirements, indicated in paragraphs 8a(f)(c) and (d) above, during development of the planning and programming documents.

b. Design Phase.

(1) The designated representative of the using activity, having final approval authority for the project

will review and approve interior design in a manner that is compatible with the provisions of AR 415-15.

(2) USACE MSC and district commands will:

(a) Accomplish interior design services within the scope and methods described herein, and as stated in the programming documents and design directives.

(b) Assure that interior design services are coordinated with the architectural design and reflect the requirements of the using activity.

(c) Verify and validate the technical adequacy and professional quality of the interior design.

c. Construction and Procurement Phases.

(1) The using activity and installation have the following responsibilities regarding interior design:

(a) Procurement of furniture and equipment for delivery to coincide as closely as possible with beneficial occupancy of the building.

(b) Tracking of procurement to assure timely receipt of required furniture and equipment.

(c) Warehousing of furniture and equipment until it is required for placement in the building.

(d) Delivery, assembly, and placement of furniture and furnishings at the project site.

(e) Verification that furniture and equipment received meet specifications requirements.

(f) Establishment of a move in date for the user. This date should be coordinated with the USACE MSC or district command to assure adequate time to furnish the facility after it is released for beneficial occupancy.

(2) USACE MSC and district commands have the following responsibilities:

(a) Assure that appropriate information is provided to the using activity to fully describe the interior design intentions, and the maintenance and operational aspects of the building.

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(b) Establish beneficial occupancy date so that procurement of furniture and equipment by the using activity or by USACE may be scheduled for a timely delivery.

(3) When USACE provides furniture-related interior design services, the using activity or installation may request the following execution services from USACE on a reimbursable basis:

(a) Technical consultation during procurement, delivery and placement of furniture and equipment.

(b) Assistance in evaluating deviations from specified furniture and equipment to avoid installation of inferior or inappropriate furniture and equipment.

(c) Services in support of the using activities responsibilities indicated in paragraphs 8c(l)(a), (b), and (e) above including supervision of assembly and placement.

9. Methods of Accomplishment. Design and design work shall be accomplished by, or in consultation with professional interior designers and architects. Qualification of designers will be based on completion of a recognized program of academic training in interior design and demonstrated interior design

experience. When furniture-related services are provided, those services should be accomplished by the same designer providing the building-related services if possible. Methods for accomplishment of interior design may include in-house capability, Architect Engineer (A-E) contract, separate interior design service contract, or indefinite delivery contract for interior design services.

10. Funding. Project design funds will be used for building-related interior design services. Funds for furniture-related interior design services, including design reviews, will be provided separately by the using activity, except as indicated in paragraph 11 of this regulation.

11. Exception. Because the furniture-related interior design is critical to the operational effectiveness of living, administrative, and operational facilities, USACE encourages the use of furniture-related interior design services. USACE will provide furniture-related interior design services as an integral part of the building design without additional cost to the using activity for Category Codes 610, 310 & 171 and for DA Standard Design Packages with comprehensive interior designs. The using activity, however, must commit funds for the procurement of the furniture on the DD Form 1391 and request this additional service.

FOR THE COMMANDER:

3 Appendices

APP A - References

APP B - Definitions

APP C - Government Sources of Supply



WILLIAM D. BROWN
Colonel, Corps of Engineers
Chief of Staff

APPENDIX A

REFERENCES

1. Federal Acquisition Regulations (FAR).

a. Part 8, Required Sources of Supplies and Services.

b. Part 10, Specifications, Standards, and Other Purchase Descriptions.

2. Department of the Army.

a. AR 415-15, Military Construction, Army (MCA) Program Development.

b. AR 415-17, Cost Estimating for Military Programming.

3. U.S. Army Corps Of Engineers.

a. ER 1110-345-700, Engineering and Design, Design Analyses.

b. ER 1110-345-710, Engineering and Design, Drawings.

c. DG 1110-3-122, Design Guide for Interiors.

d. Architectural and Engineering Instructions (AEI), Design Criteria Issued by HQUSACE (CEMP-EA). Additional copies are available from HQUSACE (CEMP-EA), 20 Massachusetts Ave., N.W., Washington, DC 20314-1000.

e. Architectural and Engineering Instructions (AEI), Medical Design Standards, Issued by HQUSACE (CEMP-EM). Additional copies are available from HQUSACE (CEMP-EM), 20 Massachusetts Ave., N.W., Washington, DC 20314-1000.

APPENDIX B

DEFINITIONS

1. Building-related Interior Design. Design in support of installed building equipment and personal property fixed are an integral part of building-related interior design.

a. Installed Building Equipment. Construction elements of building-related interior design are defined as installed building equipment by Appendix H, Equipment Installation, of AR 415-15. They consist of items that are affixed or built into the facility and become an integral part of the facility. Installed building equipment is MILCON funded and is provided as part of the construction contract. Examples of installed building equipment associated with building-related interior design are listed in paragraph H-1 of AR 415-15.

b. Personal Property Fixed. Personal property fixed is defined by AR 415-15, Appendix H as capital equipment and other equipment of a movable nature that has been fixed in place or attached to real property, but may be severed or removed from buildings without destroying the usefulness of the facilities. Personal property fixed is normally funded as Other Procurement, Army (OPA), however, the utility support for this equipment is MILCON funded. Equipment installation may be funded by either fund source, and installation responsibilities must be defined in the contract documents.

c. Pre-wired Work Stations. Pre-wired work stations are a special area within personal property fixed.

(1) Physical Definition. The physical characteristics of a pre-wired work station should include posts, panels, partitions, wiring for electrical and information systems, task lighting, and partition hung components to support individual or group work efforts. Both panel to panel and post and panel systems are acceptable. Additional system components are ambient lighting and partition-supported files. Pre-wired work stations do not

include movable furniture and furnishings such as chairs, stand alone file cabinets, coat hooks, file trays, or similar accoutrements.

(2) Functional Definition. A pre-wired work station should, at a minimum, provide for the following functions:

(a) An acoustically treated enclosure defining the limits of an individual or a shared use work station.

(b) Adequate work surfaces to accommodate the individual's equipment, writing surface, and work layout surface.

(c) Storage space for individual files and supplies.

(d) Task lighting and electrical and information systems outlets to support the individual's equipment.

(3) Planning and Design. When pre-wired work stations are planned as an integral part of new construction or MILCON funded renovation they may be MILCON funded. To obtain MILCON funded pre-wired work stations, they must be justified and itemized on programming documents. Indicate number of work stations, unit cost and total cost as a line item under primary facility. Pre-wired work stations must also be itemized in Government estimates, and contractor pricing.

(4) Construction. MILCON funded pre-wired work stations will be provided by the construction contractor based on project drawings and specifications. When the contractor provides pre-wired work stations, the provisions of the FAR that apply to construction are applicable.

2. Furniture-related Interior Design. Elements associated with furniture-related interior design are defined as personal property moveable by Appendix H of AR 415-15. Elements associated with furniture-

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related interior design consist of capital equipment and other equipment of a movable nature. Personal property is generally mission specific and can be separated from the building without destroying its use for another function. Personal property should be financed from Operations and Maintenance, Army (OMA) or Other Procurement, Army (OPA) funds, depending on the investment threshold.

a. Physical Definition. Items associated with furniture-related interior design include, but are not limited to, the following items:

(1) **Furniture.** Including Desks, Tables, Chairs, Sofas, Ergonomic Seating, Free Standing and Mobile Storage, Free Standing Acoustical Screens, and Modular and Automated Data Processing (ADP) Furniture.

(2) **Furnishings.** Including Art Work, Curtains, Draperies, and Rugs.

(3) **Mission Equipment.** Including Computers, ADP, Medical and Dental, Organs and Planos, Simulators and Training Aids, Printing, Photographic, and Shop Equipment.

b. Planning and Design. Users should provide OMA or OPA funding for furniture, furnishings, equipment and for the associated installation costs. When furniture-related interior design is requested as part of a MILCON project, furniture and furnishings should be itemized on DD Form 1391 and Government estimates. DD Form 1391 should indicate furniture requirements in Section 13, and furniture cost itemized in Section 2G.

c. Procurement. Procurement of furniture and furnishings is considered Government procurement, and the provisions of FAR Parts 8 and 10 apply. See Appendix C for Government Sources of Supply. When systems furniture is provided as part of an OMA funded renovation project or a reconfiguration, it is to be procured as furniture.

PROCUREMENT PROCEDURES FOR FURNITURE

- A. THE MISSION-COMPREHENSIVE INTERIOR DESIGN PACKAGE
- B. PRIORITIES FOR USE OF GOVERNMENT SUPPLY SOURCES IN ACCORDANCE WITH FEDERAL ACQUISITION REGULATION 8.001.
 - AGENCY INVENTORIES
 - EXCESS FROM OTHER AGENCIES
 - FEDERAL PRISON INDUSTRIES
 - COMMITTEE FOR PURCHASE FROM THE BLIND AND OTHER SEVERELY HANDICAPPED
 - GSA STOCK PROGRAMS (DEFENSE LOGISTICS AGENCY, DEPARTMENT OF VETERANS AFFAIRS, MILITARY INVENTORY CONTROL POINTS.
 - MANDATORY FEDERAL SUPPLY SCHEDULES
 - OPTIONAL USE OF FEDERAL SUPPLY SCHEDULES
 - COMMERCIAL SOURCES
- C. PROCURING FROM THE FEDERAL PRISON INDUSTRIES, REQUESTS FOR WAIVER.
- D. GSA STOCK PROGRAMS
- E. PROCUREMENT FROM FEDERAL SUPPLY SCHEDULES
 - COMPETITION REQUIREMENTS
 - MAXIMUM ORDER LIMITATIONS
- F. PROCUREMENT FROM OPEN MARKET SOURCES
 - UNDER \$25,000, REQUEST FOR QUOTATIONS
 - OVER \$25,000, INVITATION FOR BID (IFB'S)
- G. SPECIFICATIONS
- H. COMMUNICATION

APPENDIX C

GOVERNMENT SOURCES OF SUPPLY

1. Priority of Sources. FAR, Part 8.001, indicates the order of preference for acquisition of supplies and services for the Federal Government.

2. Federal Prison Industries (FPI). FPI is a mandatory source of supply and should be considered in accordance with the requirements of FAR, Part 8.6. A furniture catalog and other product information are available from UNICOR, Federal Prisons Industries, Inc., 320 1st Street, N.W., Washington, DC 20534.

3. General Services Administration (GSA). The use of Federal Supply Schedules is optional for Department of Defense agencies. GSA schedules do provide a wide selection of furniture and furnishing products. GSA Federal Supply Service source information is available through the Centralized Mailing Lists Services (CMLS), P.O. Box 6477, Fort Worth, TX 76115.

WAIVER REQUEST PROCEDURE

In accordance with Title 18, U.S.C., Sec. 4124(a) and Federal Acquisition Regulations subpart 8.6, Federal Prison Industries, Inc. (UNICOR) has a mandatory preference for supplies listed in its "Schedule of Products." When an ordering office wishes to purchase supplies listed in the "Schedule" from sources other than UNICOR, it will submit a request for waiver to the Customer Service Manager, Federal Prison Industries, Inc. (UNICOR). The request will be directed as follows:

Federal Prison Industries, Inc.
320 First St., N. W. (ACACIA)
Washington, DC 20534
Attn: Customer Service Manager

Telephone: 1-800-827-3168
Facsimile: 202-628-1597

Federal Prison Industries, Inc. (UNICOR) will consider requests for waivers based on documented disparities in price, inability to meet reasonable delivery dates, and disqualifying variations in function and "match." Requests will be considered in connection with the standards set out in its Waiver Policy. UNICOR has attempted to set out with the greatest degree of objectivity the standards that it applies in making decisions on waivers. While there must inevitably be some discretion exercised in these decisions, UNICOR will always give careful consideration to a customer's request. It is guided in all its decisions by its commitment to "Total Customer Satisfaction."

A. Requests shall contain the following information:

1. As complete a description as possible of the required items: e.g., National Stock Number, descriptive literature such as cuts, illustrations, drawings, and brochures that explain the characteristics and/or the construction. When applicable, e.g., items built to a military or Federal specification, a complete technical data package should be submitted.
2. Quantity required, price of preferred item and required delivery date.
3. In situations where the waiver request is based on functional differences, a comparison of the functional differences between the requested item and the "schedule" item should be provided identifying as a minimum:
 - (a) inadequacies of the "schedule" item to perform the required functions; and
 - (b) economic, or other advantages of the item requested.
4. Estimated annual usage or future need for similar items or a statement that the requirement is nonrecurring and no future need is anticipated. Indicate if this or similar items have previously been purchased from UNICOR.

B. UNICOR delivery schedules are consistent with delivery schedules for comparable items appearing on General Services Administration Federal Supply Schedules (FSS). Where schedules for comparable items do not exist, deliveries are consistent with good commercial practices. In the event that delivery times shorter than normally available from the FSS or commercial sources are required, certification, in writing from the contracting officer must be provided stating the reason for the shorter delivery requirement.

C. All factors are considered when a determination is made. This includes customer needs, current factory loading and future requirements. Each request is evaluated on its own merits. UNICOR policy does not permit blanket waivers but evaluates each request on a case-by-case basis considering, primarily, the needs of the customer.

D. Appeals to waiver denials can be made by forwarding reasons for the appeal to the Customer Service Manager by letter. Please note in your transmission that this is an appeal and reference the original waiver identification number. Appeals should be transmitted no later than 30 days after receipt of the original decision.

E. Every attempt will be made to respond to waiver requests and appeals within five (5) working days of receipt.

F. Ordering offices should not initiate action to acquire similar items from sources other than UNICOR until a request for waiver is approved.

To check the status of your request or to inquire about prices, delivery, order status or other concerns please call the UNICOR Customer Service Hotline:

1-800-827-3168

FAC 90-7 SEPTEMBER 23, 1991

PART 8-REQUIRED SOURCES OF SUPPLIES AND SERVICES

8.404-1

8.403 Types of Federal Supply Schedules.

8.403-1 Single-award schedules.

Single-award schedules cover contracts made with one supplier at a stated price for delivery to a geographic area as defined in the schedule. Most schedules contain all information necessary for placing orders. Some schedules specify that contractor catalogs must be used for additional ordering information to aid in the selection of fabrics, colors, and similar variables.

8.403-2 Multiple-award schedules.

Multiple-award schedules cover contracts made with more than one supplier for comparable supplies and services. Contracts are awarded to suppliers of the same generic types of items at varying prices for delivery within the same geographic area. Contractor catalogs and pricelists must be used with the schedules to prepare delivery orders. The catalogs and pricelists contain information such as item descriptions, prices and discounts, order limitations, and delivery.

8.403-3 New Item Introductory Schedule.

The New Item Introductory Schedule (NIIS) provides the means to introduce new or improved products into the Federal Supply System. The schedule lists brand names of products available from various suppliers. With the exception of GSA, the only mandatory user of this schedule, Federal agencies and agencies authorized by law or agreement may use the NIIS on an optional basis. Ordering offices must use contractor catalogs and pricelists with the schedule to prepare delivery orders.

8.403-4 International Federal Supply Schedule.

(a) The International Federal Supply Schedule (IFSS) provides sources of supply (supplies and services) at reasonable prices to U.S. Government activities located overseas. The use of the schedule is mandatory only on GSA.

(b) The schedule is divided into two sections. Section A includes those items which were awarded under sealed bid procedures, while Section B covers items that were awarded under negotiated procedures.

(c) Ordering offices need to review the information in the schedule and any applicable contractor's catalogs/price lists to ensure the proper placement of orders. Orders are placed directly with the contractors.

(d) Ordering offices shall forward copies of any orders (at the time the orders are issued) to the contracting office designated in the IFSS.

* 8.404 Using schedules.

(a) The planning, solicitation, and award phases of Federal Supply Schedules comply with FAR requirements.

Consequently, contracting officers need not seek further competition, synopses the solicitation or award, determine fair and reasonable pricing, or consider small business-small purchase set-aside procedures when placing an order under a Federal Supply Schedule.

(b) Before soliciting commercial sources, executive agencies shall determine if the required supplies or services, or similar supplies or services fulfilling the same purpose, are available from schedules (see FPMR 101-26.4). If so, the ordering office shall proceed in accordance with the procedure of 8.404-1 or 8.404-2, as appropriate.

(c) In the case of mandatory schedules, ordering offices shall not (1) solicit bids, proposals, quotations, or otherwise test the market solely for the purpose of seeking alternative sources to Federal Supply Schedules; or (2) request formal or informal quotations from Federal Supply Schedule contractors for the purpose of price comparisons.

8.404-1 Mandatory use. See Deviation per AL-91-7

Schedules identify executive agencies required to use them as mandatory sources of supply. The single-award schedule shall be used as a primary source and the multiple-award schedule as a secondary source. The following are exceptions to the mandatory-use requirement:

(a) *Urgent requirements.* When an ordering office requires supplies or services with a shorter delivery time than specified in the schedules, and time permits, the ordering office shall request the contractor by letter, telegram, mailgram, or telephone conversation (confirmed in writing) to state the best delivery time that can be met under the circumstances and subject to all other terms and conditions of the schedule contract. The contractor shall be instructed to reply to the inquiry within not more than 3 workdays after receipt, by the same or a faster communications medium than the one by which the inquiry was received. If the contractor offers accelerated delivery acceptable to the ordering office, orders shall obligate the contractor to make the shorter delivery under all other terms and conditions of the contract. When the contractor fails to reply, or the best delivery time does not meet the ordering office's requirements, use of the schedule is not mandatory.

(b) *Small requirements.* Dollar or quantity minimums are established for most schedules, below which ordering offices are not obligated to order and contractors are not obligated to accept orders. Ordering offices may submit orders below established minimums, subject to the contractor's acceptance. Once an order is accepted, the contractor is obligated to perform according to all the terms and conditions of the contract. Some schedules require the contractor to accept orders below the dollar or quantity minimum, but authorize the contractor to include a service charge up to a certain dollar amount. In these cases, the

FAC 90—5 JULY 25, 1991

PART 8—REQUIRED SOURCES OF SUPPLIES AND SERVICES

8.405-4

8.405 Ordering office responsibilities.

Ordering offices shall place orders directly with contractors and shall perform contract administration on individual orders. Ordering offices should deal directly with contractors concerning contract performance (see 41 CFR 101-26.403-1).

* **8.405-1 Ordering from multiple-award schedules.**

When ordering from multiple award schedules, ordering offices shall use the procedures set forth below. When these procedures are followed, orders placed against schedules will result in the lowest overall cost alternative to meet the needs of the Government. —

(a) Orders should be placed with the schedule contractor offering the lowest delivered price available. The ordering office shall review the schedule price lists that are reasonably available at the ordering office. Where the ordering office has available fewer than three price lists from current schedule contractors that offer the required items, the ordering activity shall obtain additional price lists from schedule contractors listed in the GSA schedule for the required items. The ordering office shall fully justify in the contract file orders for a line item exceeding the price reasonableness verification threshold at 13.106 placed at other than the lowest price identified in its review. Justification for ordering a higher priced item may be based on such considerations as—

- (1) Delivery time in terms of actual need that cannot be met by a contractor offering a lower price;
- (2) Specific or unusual requirements such as differences in performance characteristics;
- (3) Compatibility with existing equipment or systems;
- (4) Trade-in considerations that favor a higher priced item and produce the lowest net cost; and
- (5) Special features of one item not provided by comparable items that are required in effective program performance.

(b) When two or more items at the same delivered price will meet an ordering office's needs, the ordering office shall give preference to the items of small business and/or labor surplus area concerns by following the order of priority in 14.407-6 for equal low bids.

(c) When a schedule lists both foreign and domestic items that will meet the ordering office's needs, the ordering office shall apply the procedures of Part 25, Foreign Acquisition.

(d) If an item available from a multiple-award schedule is ordered from the schedule contractor at a price lower than the schedule price, the ordering office shall notify the schedule contracting office within 10 days.

8.405-2 Order placement.

Ordering offices may use Optional Form 347, or an agency-prescribed form, to order items from schedules and

shall place orders directly with the contractor within the limitations specified in each schedule. Orders shall include, at a minimum, the following information in addition to any information required by the schedule:

- (a) Complete shipping and billing addresses.
- (b) Contract number and date.
- (c) Agency order number.
- (d) F.o.b. delivery point; i.e., origin or destination.
- (e) Discount terms.
- (f) Delivery time.
- (g) Special item number or national stock number.
- (h) Brief, complete description of each item (when ordering by model number, features and options such as color, finish, and electrical characteristics, if available, must be specified).
- (i) Quantity and any variation in quantity.
- (j) Number of units.
- (k) Unit price.
- (l) Total price of order.
- (m) Points of inspection and acceptance.
- (n) Other pertinent data; e.g., delivery instructions or receiving hours and size-of-truck limitation.
- (o) Marking requirements.
- (p) Level of preservation, packaging, and packing.

8.405-3 Inspection and acceptance.

(a) Consignees shall inspect supplies at destination except when—

(1) The schedule provides for the schedule contracting agency to perform source inspection (in this case, the schedule will indicate that mandatory source inspection is required); or

(2) A schedule item is covered by a product description, and the ordering office determines that the schedule contracting agency's inspection assistance is needed (inspection assistance may be based on the ordering volume, the complexity of items, or the past performance of the supplier).

(b) When the schedule contracting agency performs the inspection, as specified in the schedule, the ordering office will provide two copies of the order specifying source inspection to the schedule contracting agency. The schedule contracting agency will notify the ordering office of acceptance or rejection of the supplies.

(c) Material inspected at source by the schedule contracting agency, and determined to conform with the product description of the schedule, shall not be reinspected for the same purpose. The consignee shall limit inspection to quantity and condition on receipt.

(d) Unless otherwise provided in the schedule, acceptance shall be conclusive except as regards latent defects, fraud, or such gross mistakes as amount to fraud.

8.405-4 Delinquent performance.

When the contractor fails to perform on the order, the

**APPENDIX H
DEPARTMENT OF DEFENSE
MINIMUM ANTITERRORISM
STANDARDS FOR BUILDINGS
(DRAFT)**

08 MAY 2002

UNIFIED FACILITIES CRITERIA (UFC)

DRAFT

DoD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS



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DOD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS

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UNDER SECRETARY OF DEFENSE (ACQUISITION, TECHNOLOGY, AND
LOGISTICS) (Preparing Activity)

J3, DEPUTY DIRECTORATE FOR ANTITERRORISM AND FORCE PROTECTION,
JOINT CHIEFS OF STAFF

U.S. ARMY CORPS OF ENGINEERS

NAVAL FACILITIES ENGINEERING COMMAND

AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

Record of Changes (changes are indicated by \1\ ... /1/)

Change No.	Date	Location

This UFC supersedes Interim Department of Defense Antiterrorism / Force
Protection Construction Standards of 16 December 1999, except that the Interim
Standard will remain in effect for fiscal year 2002 and 2003 Military Construction
Programs.

FOREWORD

The Unified Facilities Criteria (UFC) system is prescribed by MIL-STD 3007, provides planning, design, construction, operations, and maintenance criteria, and applies to all DoD commands. UFC will be used for all service projects and work for other customers where appropriate.

UFC are living documents and will be periodically reviewed, updated, and made available to users as part of the Services' responsibility for providing technical criteria. Headquarters, U.S. Army Corps of Engineers (HQUSACE), Naval Facilities Engineering Command (NAVFAC), and Air Force Civil Engineer Support Agency (AFCESA) are responsible for administration of the UFC system. Technical content of UFC is the responsibility of the cognizant DoD working group. Recommended changes with supporting rationale should be sent to the respective service proponent office, as noted below. Defense agencies should contact the preparing service for document interpretation and improvements.

- HQUSACE, ATTN: CECW-E, 441 G Street, NW, Washington, DC 20314-1000, by electronic [Criteria Change Request \(CCR\)](#) form on the TECHINFO site listed below.
- Commander, Atlantic Division, Naval Facilities Engineering Command, 1510 Gilbert Street (ATTN: NAVFAC Engineering Innovation and Criteria Office), Norfolk, Virginia 23511-2699, or ufc@efdlant.navy.mil, by commercial telephone (757) 322-4200 or DSN 262-4200, or by facsimile machine to (757) 322-4416
- Air Force Civil Engineer Support Agency, 139 Barnes Drive, Tyndall Air Force Base, Florida 32403-5319, or larry.spangler@Tyndall.af.mil.

UFC are effective upon issuance. UFC are distributed only in electronic media from the following sources:

- USACE TECHINFO Internet site <http://www.hnd.usace.army.mil/techinfo/index.htm>.
- NAVFAC Engineering Innovation and Criteria Office Internet site <http://www.efdlant.navy.mil/criteria>
- Construction Criteria Base (CCB) system maintained by the National Institute of Building Sciences at Internet site <http://www.nibs.org/ccb>.

Hard copies of UFC printed from electronic media should be checked against the current electronic version prior to use to ensure that they are current.

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FOREWORD (continued)

This specific document is also issued under the authority of DoD Instruction Number 2000.16, *DoD Antiterrorism Standards* which requires DoD Components to adopt and adhere to common criteria and minimum construction standards to mitigate antiterrorism vulnerabilities and terrorist threats.

This document applies to the Office of the Secretary of Defense (OSD); the Military Departments (including their National Guard and Reserve Components); the Chairman, Joint Chiefs of Staff and Joint Staff; the Combatant Commands; the Office of the Inspector General of the Department of Defense; the Defense Agencies; the Department of Defense Field Activities; and all other organizational entities within the Department of Defense hereafter referred to collectively as “the DoD Components.”

The standards established by this document are minimums set for DoD. Each DoD Component may set more stringent antiterrorism building standards to meet the specific threats in its area of responsibility.

Any changes, updates, or amendments to this particular UFC must have the approval of the DoD Engineering Senior Executive Panel (ESEP).

This document is effective immediately and is mandatory for use by all the DoD Components.

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CHAPTER 1

INTRODUCTION

1-1 **GENERAL.** This document represents a significant commitment by DoD to seek effective ways to minimize the likelihood of mass casualties from terrorist attacks against DoD personnel in the buildings in which they work and live.

1-1.1 **Dynamic Threat Environment.** Terrorism is real, evolving, and continues to increase in frequency and lethality throughout the world. The unyielding, tenacious, and patient nature of the terrorists targeting DoD interests forces us to closely examine existing policies and practices for deterring, disrupting, and mitigating potential attacks. Today, terrorist attacks can impact anyone, at any time, at any location, and can take many forms. Deterrence against terrorist attacks begins with properly trained and equipped DoD personnel employing effective procedures. While terrorists have many tactics available to them, they frequently use explosive devices when they target large numbers of DoD personnel. Most existing DoD buildings offer little protection from terrorist attacks. By applying the Minimum Antiterrorism Standards for Buildings described in this document, we become a lesser target of opportunity for terrorists.

1-1.2 **Responsibility.** Protecting people on a DoD installation or site must start with an understanding of the risk of a terrorist attack. Application of the standards herein should be consistent with the perceived or identified risk. Everyone in DoD is responsible for protecting our people and other resources.

1-1.2.1 **Individuals.** Each DoD employee, contractor, or vendor is responsible for minimizing opportunities for terrorists to threaten or target themselves, their co-workers, and their families on DoD installations or sites.

1-1.2.2 **Installation Commanders.** The installation commander must protect the people on his/her installation, or site, by managing and mitigating the risk to those people in the event of a terrorist attack. The installation commander is responsible for applying the standards herein, consistent with the identified or perceived risk of DoD people being hurt or killed.

1-1.2.3 **Service Secretaries and Agency Heads.** The Secretaries of the Military Departments and heads of Defense Agencies and Defense Field Activities shall ensure compliance and issue guidance to implement these standards. That guidance will include direction to require the installation commander to notify or seek approval from a major command or claimant or higher level if a new construction or renovation project, or a leased facility, will not meet any one or more of the standards.

1-1.3 **Planning and Integration.** When the best procedures, proper training, and appropriate equipment fail to deter terrorist attacks, adherence to these standards goes far in mitigating the possibility of mass casualties from terrorist attacks against DoD personnel in the buildings in which they work and live. Although predicting the specific threat to everyone is not possible, proper planning and integration of those plans provides a solid foundation for preventing, and if necessary reacting, when terrorist incidents or other emergencies unfold. An effective planning process facilitates

the necessary decision making, clarifies roles and responsibilities, and ensures support actions generally go as planned. A team consisting of the chain of command and key personnel from all appropriate functional areas who have an interest in the building and its operation executes this planning process. The team should include, as a minimum, antiterrorism/force protection, intelligence, security, and facility engineering personnel. This team is responsible for identifying requirements for the project, facilitating the development of supporting operational procedures, obtaining adequate resources, and properly supporting all other efforts needed to prudently enhance protection of the occupants of every inhabited DoD building. For further information on planning and integration, refer to the *DoD Security Engineering Manual*.

1-2 **REFERENCES.**

- Interim Department of Defense Antiterrorism / Force Protection Construction Standards, December 16, 1999 (hereby cancelled)
- DoD Instruction 2000.16, DoD Antiterrorism Standards, June 14, 2001.
- DoD Handbook 2000.12-H, Protection of DoD Personnel and Activities Against Acts of Terrorism and Political Turbulence, February 1993
- American Society of Civil Engineers Standard (ANSI/ASCE) 7-98, Minimum Design Loads for Buildings and Other Structures, January 2000
- Unified Facilities Criteria (UFC) 4-010-02, *DoD Security Engineering Manual*, (Draft)
- Unified Facilities Criteria (UFC) 4-010-10, *DoD Minimum Antiterrorism Standoff Distances for Buildings; (For Official Use Only (FOUO))*
- Sections 2805(a)(1) and 2805(c)(1) of Title 10, US Code
- Security Engineering Working Group web site (<http://sewg.nwo.usace.army.mil>)
- DoD 6055.9-STD, DoD Ammunition and Explosive Safety Standards, July 1999

1-3 **STANDARDS AND RECOMMENDATIONS.** Mandatory DoD minimum antiterrorism standards for new and existing inhabited buildings are contained in Appendix B. Additional recommended measures for new and existing inhabited buildings are included in Appendix C. Mandatory DoD minimum antiterrorism standards for expeditionary and temporary structures are contained in Appendix D.

1-4 **INTENT.** The intent of these standards is to minimize the possibility of mass casualties in buildings or portions of buildings owned, leased, privatized, or otherwise occupied, managed, or controlled by or for DoD. These standards provide appropriate, implementable, and enforceable measures to establish a level of protection against terrorist attacks for all inhabited DoD buildings where no known threat of

terrorist activity currently exists. While complete protection against all potential threats for every inhabited building is cost prohibitive, the intent of these standards can be achieved through prudent master planning, real estate acquisition, and design and construction practices. Where the minimum standoff distances detailed in these standards are met, most conventional construction techniques can be used with only marginal impact on the total construction or renovation cost. The financial impact of these standards will be significantly less than the economic and intangible costs of a mass casualty event.

1-5 **LEVELS OF PROTECTION.** The levels of protection provided by these standards meet the intent described above and establish a foundation for the rapid application of additional protective measures in a higher threat environment. These standards may be supplemented where specific terrorist threats are identified, where more stringent local standards apply, or where local commanders dictate additional measures. Detailed descriptions of the levels of protection are provided in Chapter 2 and the *DoD Security Engineering Manual*.

1-5.1 **DoD Component Standards.** Where DoD Component standards such as geographic Combatant Commander standards address unique requirements, those standards will be incorporated in accordance with their implementing directives, but not to the exclusion of these standards.

1-5.2 **Threat-Specific Requirements.** Where a design basis threat is identified whose mitigation requires protective measures beyond those required by these standards or DoD Component standards, those measures will be developed in accordance with the provisions of the *DoD Security Engineering Manual*. The provisions of the *DoD Security Engineering Manual* include the design criteria that will be the basis for the development of the protective measures, estimates of the costs of those measures, and detailed guidance for developing the measures required to mitigate the identified threat. The design criteria include the assets to be protected, the threat to those assets, and the desired level of protection. Use of the *DoD Security Engineering Manual* will ensure uniform application, development, and cost estimation of protective measures throughout DoD.

1-5.3 **Critical Facilities.** Buildings that must remain mission operational during periods of national crisis and/or if subjected to terrorist attack should be designed to significantly higher levels of protection than those provided by these standards.

1-5.4 **Explosive Safety Standards.** These antiterrorism standards establish criteria to minimize the potential for mass casualties and progressive collapse from a terrorist attack. DoD 6055.9-STD, *DoD Ammunition and Explosive Safety Standards* as implemented by Service component explosive safety standards, establish acceptable levels of protection for accidental explosions of DoD-titled munitions. The explosive safety and antiterrorism standards address hazards associated with unique events; therefore, they specify different levels of protection. Compliance with both standards is required. Where conflicts arise, the more stringent criteria will govern.

1-6 **APPLICABILITY.** These standards apply to all DoD Components, to all DoD inhabited buildings, and to all DoD expeditionary and temporary structures in accordance with the following:

1-6.1 **New Construction.** Implementation of these standards is mandatory for all new construction regardless of funding source in accordance with the following:

1-6.1.1 **Military Construction (MILCON).** These standards apply to MILCON projects starting with the Fiscal Year 2004 Program. Projects programmed or designed under the Interim DoD Antiterrorism / Force Protection Construction Standards do not have to be reprogrammed or redesigned to meet the requirements of these standards. The provisions of the Interim Standards will apply to those projects. Due to minor changes between these standards and the Interim Standards, projects prior to the Fiscal Year 2004 Program should comply with these standards where possible.

1-6.1.2 **Host-Nation And Other Foreign Government Funding.** These standards apply to new construction funded under host-nation agreements or from other funding sources starting in Fiscal Year 2004 or as soon as negotiations with the foreign governments can be completed.

1-6.1.3 **Other Funding Sources.** These standards apply to all new construction projects funded by sources other than MILCON (such as Non-Appropriated Funds, Operations and Maintenance, and Working Capital Funds) starting with Fiscal Year 2004. Projects funded prior to that fiscal year should comply with these standards where possible.

1-6.2 **Existing Buildings.** These standards will apply to existing facilities starting with the Fiscal Year 2004 program when triggered as specified below, regardless of funding source. Projects funded prior to that fiscal year should comply with these standards where possible. For existing leased buildings see paragraph 1-6.4.

1-6.2.1 **Major Investments.** Implementation of these standards to bring an entire building into compliance is mandatory for all DoD building renovations, modifications, repairs, and restorations where those costs exceed 50% of the replacement cost of the building except as otherwise stated in these standards. The 50% cost is exclusive of the costs identified to meet these standards. Where the 50% threshold is not met, compliance with these standards is recommended.

1-6.2.2 **Conversion of Use.** Implementation of these standards is mandatory when any portion of a building is modified from its current use to that of an inhabited building, billeting, or a primary gathering building for one year or more. Examples would include a warehouse (uninhabited) being converted to administrative (inhabited) use and an inhabited administrative building being converted to a primary gathering building or billeting.

1-6.2.3 **Glazing Replacement.** Because of the significance of glazing hazards in a blast environment, implementation of the glazing provisions of these standards is mandatory for existing inhabited buildings within any planned window or door glazing

replacement project. Such replacements may require window frame modification or replacement.

1-6.3 **Building Additions.** Additions to existing inhabited buildings shall comply with the minimum standards for new buildings. If the addition is 50% or more of the gross area of the existing building, the existing building shall comply with the minimum standards for existing buildings.

1-6.4 **Leased Buildings.** DoD personnel occupying leased buildings deserve the same level of protection as those in DoD-owned buildings. Implementation of these standards is therefore mandatory for all facilities leased for DoD use and for those buildings in which DoD receives a space assignment from another government agency. This requirement is intended to cover all situations, including General Services Administration space, privatized buildings, and host-nation and other foreign government buildings. This requirement is applicable for all new leases executed on or after 1 October 2005 and to renewal or extension of any existing lease on or after 1 October 2009. Leases executed prior to the above fiscal years will comply with these standards where possible.

1-6.4.1 **Partial Occupancy.** These standards only apply where DoD personnel occupy leased or assigned space constituting at least 25% of the net interior useable area or the area as defined in the lease, and they only apply to that portion of the building that is occupied by DoD personnel.

1-6.4.2 **New Buildings.** Buildings that are built to lease to DoD as of the effective date established above shall comply with the standards for new construction.

1-6.4.3 **Existing Buildings.** New leases or renewals of leases of existing buildings will trigger the minimum standards for existing buildings in accordance with the effective dates established above. For those existing buildings, protective measures other than those specified in these standards may be used if they provide equivalent levels of protection to those required by these standards. Refer to the *DoD Security Engineering Manual* for guidance on mitigating measures.

1-6.5 **Expeditionary and Temporary Structures.** Implementation of these standards is mandatory for all expeditionary and temporary structures that meet the occupancy criteria for inhabited or primary gathering buildings or billeting. See Appendix D for structure types that meet the expeditionary and temporary structures criteria.

1-6.5.1 **New Structures.** These standards apply to all new expeditionary sites effective immediately.

1-6.5.2 **Existing Structures.** These standards will apply to all existing expeditionary activities beginning in Fiscal Year 2004. Prior to that fiscal year, existing expeditionary structures should comply with these standards where possible.

1-6.6 **National Guard Buildings.** Any National Guard building that uses Federal funding for new construction, renovations, modifications, repairs, restorations,

or leasing and that meets the applicability provisions above, will comply with these standards.

1-6.7 **Exemptions.** Unless DoD Components dictate otherwise, the following buildings are exempt from requirements of these standards as specified below. However, compliance with these standards for those buildings is recommended where possible. In addition, there are some exemptions to elements of individual standards that are included in the text of those standards in appendix B. The rationale for all exemptions is detailed in chapter 2.

1-6.7.1 **Family Housing With 12 Units Or Fewer Per Building.** These buildings are exempt from all provisions of these standards.

1-6.7.2 **Stand-Alone Franchised Food Operations.** These buildings are exempt from standoff distances to parking and roadways. All other standards apply.

1-6.7.3 **Stand Alone Shoppettes, Mini Marts And Similarly Sized Commissaries.** These buildings are exempt from standoff distances to parking and roadways. All other standards apply.

1-6.7.4 **Gas Stations And Car Care Centers.** These facilities are exempt from all provisions of these standards.

1-6.7.5 **Medical Transitional Structures And Spaces.** These structures are exempt from standoff distances to parking and roadways. All other standards apply.

1-6.7.6 **Other Transitional Structures And Spaces.** Transitional structures and spaces that will be occupied for less than one year and that are not billeting, primary gathering buildings, or medical transitional structures, are exempt from standoff distances to parking and roadways. All other standards apply.

1-6.7.7 **Recruiting Stations In Leased Spaces.** Recruiting stations located in leased spaces are exempt from all provisions of these standards.

1-7 **PROGRAMMING.**

1-7.1 **Documentation.** The inclusion of these standards into DoD construction or the inclusion of protective measures above the requirements of these standards will be incorporated into the appropriate construction programming documents (such as the DD Form 1391) in accordance with DoD Component guidance. Refer to the *DoD Security Engineering Manual* for guidance on the costs for implementing these standards and for providing protective measures beyond these standards.

1-7.2 **Funding Thresholds.** For existing buildings, these standards are intended solely to correct design deficiencies to appropriately address emergent life-threatening terrorist risks. As a result, funding thresholds for Unspecified Minor Military Construction and Operations and Maintenance funding may be increased in accordance with 10 USC Sections 2805(a)(1) and 2805 (c)(1).

1-8 **INFORMATION SENSITIVITY.** Some information in these standards is exempt from mandatory disclosure under the Freedom of Information Act. The sensitive information that is exempt is the explosive weights upon which the minimum standoff distances are based, which is included in UFC 4-010-10. Allowing potential aggressors to know the minimum explosive weights that all DoD inhabited buildings are designed to resist could constitute a vulnerability. To minimize the possibility of that information being used against DoD personnel, the following provisions apply:

1-8.1 **Distribution.** Follow governing DoD and Component guidance for specific requirements for handling and distribution of For Official Use Only information. In general, distribution of this document is unlimited. Distribution of the tables (Tables 1 and 2) in UFC 4-010-10 is authorized only to U.S. Government agencies and their contractors. In addition, where it is within Status of Forces Agreements (SOFA) or other similar information exchange agreements, the information in these standards may be distributed to host-nation elements for the purposes of their administration and design of host-nation funded or designed construction.

1-8.2 **Posting To The Internet.** This document may be posted freely to the Internet; however, because the tables (Tables 1 and 2) in UFC 4-010-10 are For Official Use Only they cannot be posted to any web site that is accessible to the general public. In addition, other documents that include information from these standards that are identified as For Official Use Only cannot be posted to web sites accessible to the general public. For Official Use Only information may be posted to protected, non-publicly accessible web sites that comply with standards established by DoD for administration of web sites.

1-8.3 **Plans and Specifications.** Construction plans and specifications should include only that information from this document that is necessary for a contractor to develop a bid on a project. The explosive weights used in these standards shall not be entered into the plans and specifications unless the plans and specifications are properly safeguarded. Plans and specifications may be posted to the Internet in accordance with existing DoD Component guidance, but such documents will not include For Official Use Only information. All plans and specifications for inhabited buildings shall include an annotation that cites the version of these standards that was used for design.

1-8.4 **Design – Build Contracts.** Where design – build contracts are employed, prospective contractors will be responsible for developing a design proposal for that project that may be impacted by provisions of these standards. Where that is the case, consider alternate means to provide sufficient information to support their proposals. Consider for example, either specifying specific design loads or specifying the required standoff distance and providing candidate structural systems that would allow for mitigation of the applicable explosive if that standoff was less than the minimum. Once the design – build contract is awarded the contractor will be eligible to receive this complete document for use in the development of the final design package, but that contractor will be responsible for protecting the integrity of the information throughout the contract and through any subcontracts into which that contractor might enter.

1-9 **Interim Design Guidance.** The *DoD Security Engineering Manual* is currently unpublished. In lieu of referring to the *DoD Security Engineering Manual*, please see the guidance provided on the Security Engineering Working Group website at <http://sewg.nwo.usace.army.mil> .

CHAPTER 2

PHILOSOPHY, DESIGN STRATEGIES, AND ASSUMPTIONS

2-1 **GENERAL.** The purpose of this chapter is to clarify the philosophy on which these standards are based, the design strategies that are their foundation, and the assumptions inherent in their provisions. Effective implementation of these standards depends on a reasonable understanding of the rationale for them. With this understanding, engineers and security and antiterrorism personnel can maximize the efficiency of their solutions for complying with these standards while considering site-specific issues and constraints that might dictate measures beyond these minimums.

2-2 **PHILOSOPHY.** The overarching philosophy upon which this document is based is that comprehensive protection against the range of possible threats may be cost prohibitive, but that an appropriate level of protection can be provided for all DoD personnel at a reasonable cost. That level of protection is intended to lessen the risk of mass casualties resulting from terrorist attacks. Full implementation of these standards will provide some protection against all threats and will significantly reduce injuries and fatalities for the threats upon which these standards are based. The costs associated with those levels of protection are assumed to be less than the physical and intangible costs associated with incurring mass casualties. Furthermore, given what we know about terrorism, all DoD decision makers must commit to making smarter investments with our scarce resources and stop investing money in inadequate buildings that DoD personnel will have to occupy for decades, regardless of the threat environment. There are three key elements of this philosophy that influence the implementation of these standards.

2-2.1 **Time.** Protective measures needed to provide the appropriate level of protection must be in place prior to the initiation of a terrorist attack. Incorporating those measures into DoD buildings is least expensive at the time those buildings are either being constructed or are undergoing major renovation, repair, restoration, or modification.

2-2.2 **Master Planning.** Many of these standards significantly impact master planning. The most significant such impact will be in standoff distances. If standoff distances are not “reserved” they will be encroached upon and will not be available should they become necessary in a higher threat environment. The master planning implications of these standards are not intended to be resolved overnight. They should be considered to be a blueprint for facilities and installations that will be implemented over decades as those facilities and installations evolve.

2-2.3 **Design Practices.** The philosophy of these standards is to build greater resistance to terrorist attack into all inhabited buildings. That philosophy affects the general practice of designing inhabited buildings. While these standards are not based on a known threat, they are intended to provide the easiest and most economical methods to minimize injuries and fatalities in the event of a terrorist attack. The primary methods to achieve this outcome are to maximize standoff distance, to construct superstructures to avoid progressive collapse, and to reduce flying debris hazards.

These and related design issues are intended to be incorporated into standard design practice in the future.

2-3 **DESIGN STRATEGIES.** There are several major design strategies that are applied throughout these standards. They do not account for all of the measures considered in these standards, but they were the most effective and economical in protecting DoD personnel from terrorist attacks. These strategies are summarized below.

2-3.1 **Maximize Standoff Distance.** The primary design strategy is to keep terrorists as far away from inhabited DoD buildings as possible. The easiest and least costly opportunity for achieving the appropriate levels of protection against terrorist threats is to incorporate sufficient standoff distance into project designs. While sufficient standoff distance is not always available to provide the minimum standoff distances required for conventional construction, maximizing the available standoff distance always results in the most cost-effective solution. Maximizing standoff distance also ensures that there is opportunity in the future to upgrade buildings to meet increased threats or to accommodate higher levels of protection.

2-3.2 **Prevent Building Collapse.** Provisions relating to preventing building collapse and building component failure are essential to effectively protecting building occupants, especially from fatalities. Designing those provisions into buildings during new construction or retrofitting during major renovations, repairs, restorations, or modifications of existing buildings is the most cost effective time to do that. In addition, structural systems that provide greater continuity and redundancy among structural components will help limit collapse in the event of severe structural damage from unpredictable terrorist acts.

2-3.3 **Minimize Hazardous Flying Debris.** In past explosive events where there was no building collapse, a high number of injuries resulted from flying glass fragments and debris from walls, ceilings, and fixtures (non-structural features). Flying debris can be minimized through building design and avoidance of certain building materials and construction techniques. The glass used in most windows breaks at very low blast pressures, resulting in hazardous, dagger-like shards. Minimizing those hazards through reduction in window numbers and sizes and through enhanced window construction has a major effect on limiting mass casualties. Window and door designs must treat glazing, frames, connections, and the structural components to which they are attached as an integrated system. Hazardous fragments may also include secondary debris such as those from barriers and site furnishings.

2-3.4 **Provide Effective Building Layout.** Effective design of building layout and orientation can significantly reduce opportunities for terrorists to target building occupants or injure large numbers of people.

2-3.5 **Limit Airborne Contamination.** Effective design of heating, ventilation, and air conditioning (HVAC) systems can significantly reduce the potential for chemical, biological, and radiological agents being distributed throughout buildings.

2-3.6 **Provide Mass Notification.** Providing a timely means to notify building occupants of threats and what should be done in response to those threats reduces the risk of mass casualties.

2-3.7 **Facilitate Future Upgrades.** Many of the provisions of these standards facilitate opportunities to upgrade building protective measures in the future if the threat environment changes.

2-4 **ASSUMPTIONS.** Several assumptions form the foundation for these standards.

2-4.1 **Baseline Threat.** The location, size, and nature of terrorist threats are unpredictable. These standards are based on a specific range of assumed threats that provides a reasonable baseline for the design of all inhabited DoD buildings. Designing to resist baseline threats will provide general protection today and will establish a foundation upon which to build additional measures where justified by higher threats or where the threat environment increases in the future. While those baseline threats are less than some of the terrorist attacks that have been directed against U.S. personnel in the past, they represent more severe threats than a significant majority of historical attacks. It would be cost prohibitive to provide protection against the worst-case scenario in every building. The terrorist threats addressed in these standards are further assumed to be directed against DoD personnel. Threats to other assets and critical infrastructure are beyond the scope of these standards, but they are addressed in the *DoD Security Engineering Manual*. The following are the terrorist tactics upon which these standards are based:

2-4.1.1 **Explosives.** The baseline explosive weights are identified in Tables B-1 and D-1 as explosive weights I, II, and III. Their means of delivery are discussed below.

2-4.1.1.1 **Vehicle Bombs.** For the purposes of these standards, the vehicle bomb is assumed to be a stationary vehicle bomb. The sizes of the explosives in the vehicle bombs associated with explosive weight I (in equivalent weight of TNT) are likely to be detected in a vehicle during a search. Therefore, explosive weight I is the basis for the standoff distances associated with the controlled perimeter. The quantity of explosives associated with explosive weight II is assumed to be able to enter the controlled perimeter undetected; therefore, explosive weight II is the basis for the standoff distances for roadways and parking. Explosive weight II was selected because it represents a tradeoff between likelihood of detection and the risk of injury or damage.

2-4.1.1.2 **Waterborne Vessel Bombs.** For the purposes of these standards, waterborne vessels will also be assumed to contain quantities of explosives associated with explosive weight I. That weight was selected because areas beyond the shoreline are assumed not to be controlled perimeters.

2-4.1.1.3 **Placed Bombs.** Hand-carried explosives placed near buildings can cause significant localized damage, potentially resulting in injuries or fatalities. It is assumed that aggressors will not attempt to place explosive devices in areas near buildings where those devices could be visually detected by building occupants casually observing the area around the building. It is also assumed that there will be sufficient

controls to preclude bombs being brought into buildings. Explosive weight II is assumed to be placed by hand either in trash containers or in the immediate vicinity of buildings. That quantity of explosives is further assumed to be built into a bomb 150 millimeters (6 inches) or greater in height.

2-4.1.1.4 **Mail Bombs.** Explosives in packages delivered through the mail can cause significant localized damage, injuries, and fatalities if they detonate inside a building. No assumption as to the size of such explosives is made in these standards. Provisions for mail bombs are limited to locations of mailrooms so that they can be more readily hardened if a specific threat of a mail bomb is identified in the future.

2-4.1.2 **Indirect Fire Weapons.** For the purpose of these standards, indirect fire weapons are assumed to be military mortars with fragmentation rounds containing explosives equivalent to explosive weight III in Tables B-1 and D-1. Protection against the effects of such rounds on an individual building is not considered practical as a minimum standard; therefore, these standards are intended to limit collateral damage to adjacent buildings from these weapons.

2-4.1.3 **Direct Fire Weapons.** For the purpose of these standards, direct fire weapons include small arms weapons and shoulder fired rockets that require a direct line of sight. Some standards in this document are predicated on a direct fire weapon threat. Provisions of those standards are based on the assumption that those weapons will be fired from vantage points outside the control of an installation or facility. Obscuration or screening that minimizes targeting opportunities is assumed to be the primary means of protecting DoD personnel from these weapons in these standards.

2-4.1.4 **Fire.** Recent incidents indicate that causing fires can be considered a terrorist tactic. Fire may be used as a direct terrorist tactic or it may be a secondary effect of some other tactic. Examples of how fire might be used as a direct tactic would include arson and driving a fuel truck or other fuel-laden vehicle into a building.

2-4.1.5 **Chemical, Biological, and Radiological Weapons.** For the purposes of these standards, these weapons are assumed to be improvised weapons containing airborne agents employed by terrorists. These standards do not assume comprehensive protection against this threat. They provide means to reduce the potential for widespread dissemination of such agents throughout a building in the event of an attack.

2-4.2 **Controlled Perimeter.** These standards assume that procedures are implemented to search for and detect explosives to limit the likelihood that a vehicle carrying quantities of explosives equivalent to explosive weight I in Tables B-1 and D-1 could penetrate a controlled perimeter undetected. It is further assumed that access control will include provisions to reject vehicles without penetrating the controlled perimeter.

2-4.3 **Levels of Protection.** The potential levels of protection are described in Tables 2-1, 2-2, and 2-3. These standards provide a **Low** level of protection for billeting and primary gathering buildings and a **Very Low** level of protection for other inhabited buildings. Greater protection is provided for primary gathering buildings and billeting

because of the higher concentration of personnel and the more attractive nature of the target. If the minimum standoff distances are provided, or if mitigating measures are provided to achieve an equivalent level of protection, and if the threats are no greater than those indicated in Tables B-1 and D-1, the risk of injuries and fatalities will be reduced. Threats higher than those envisioned in Tables B-1 and D-1 will increase the likelihood of injuries and fatalities regardless of the level of protection. Refer to the *DoD Security Engineering Manual* for detailed guidance on levels of protection and how to achieve them for a wide range of threats.

2-4.4 Minimum Standoff Distances. The minimum standoff distances identified in Tables B-1 and D-1 were developed to provide survivable structures for a wide range of conventionally constructed buildings and expeditionary/temporary structures. These buildings range from tents and wood framed buildings to reinforced concrete buildings. For a more detailed discussion of this issue, refer to the *DoD Security Engineering Manual*.

2-4.4.1 Conventional Construction Without Analysis. The standoff distances in the “Conventional Construction Without Analysis” column in Table B-1 are based on explosive safety considerations that have been developed based on years of experience and observation. Those standoff distances may be conservative for heavy construction such as reinforced concrete or reinforced masonry; however, they may be just adequate for lighter-weight construction.

2-4.4.2 Conventional Construction With Analysis. Because standoff distances from the “Conventional Construction Without Analysis” column of Table B-1 may be overly conservative for some construction types, these standards allow for the adjustment of standoff distances based on the results of a structural analysis considering the applicable explosive weights in Table B-1. For new buildings, even if such an analysis suggests a standoff distance of less than those shown in the “Conventional Construction With Analysis” column of Table B-1, standoff distances of less than those in that column are not allowed to ensure there is a minimal standoff distance “reserved” to accommodate future upgrades that could be necessitated by an emerging threat. In addition, the 10 meter (33 feet) minimum is established to ensure there is no encroachment on the unobstructed space. For existing buildings, the standoff distances in the “Conventional Construction With Analysis” column of Table B-1 will be provided except where doing so is not possible. In those cases, lesser standoff distances may be allowed where the required level of protection can be shown to be achieved through analysis or can be achieved through construction or retrofit. In addition, the 10 meter (33 feet) minimum is established to ensure there is no encroachment on the unobstructed space.

2-4.4.3 Temporary and Expeditionary Construction. The standoff distances in Table D-1 are based on blast testing conducted against TEMPER Tents, SEA Huts, General Purpose Shelters, and Small Shelter Systems. With adequate analysis those distances may be able to be reduced without requiring mitigating measures.

2-4.5 **Exempted Building Types.** For the reasons below some building types are exempted from some or all of these standards. The minimum standards should be applied to the exempted building types where possible.

2-4.5.1 **Family Housing.** The exemption of family housing with 12 units or fewer in a single building acknowledges that the density of such units is generally low, reducing the likelihood of mass casualties. It also acknowledges the fact that low-density housing has rarely been directly targeted by terrorists. A further assumption for existing family housing with 13 or more units per building is that by designating parking spaces for specific residents or residences, the risk of parking vehicle bombs in those parking areas is reduced due to increased awareness of the vehicles that are authorized to park there.

2-4.5.2 **Shoppettes, Mini Marts, Similarly Sized Commissaries and Stand-Alone Franchised Food Operations.** These facilities by the nature of their smaller size and their operation require parking in close proximity; therefore, they are exempted from the minimum standoff distances for parking and roadways. Applying other upgrades required by these standards is feasible, however, and will lessen the risk of mass casualties.

2-4.5.3 **Gas Stations and Car Care Centers.** These facilities are exempted from these standards because, by the nature of their operation, cars must be allowed to be in close proximity to them. Other measures included in these standards would be ineffective in the absence of any control on vehicles.

2-4.5.4 **Medical Transitional Structures and Spaces.** These structures and spaces may be required for limited durations to maintain mission-critical operations during construction that require close proximity or physical connection to the existing building undergoing construction. This may make compliance with some of the standoff distance provisions of these standards impractical during the limited construction duration.

2-4.5.5 **Other Transitional Structures and Spaces.** These structures and spaces are exempted from some of the standoff distance provisions of these standards because it would be impractical to apply them considering the limited less-than-1-year duration of occupancy.

2-4.5.6 **Recruiting Stations In Leased Spaces.** These facilities are exempted because their visibility and accessibility necessitate their being located in public spaces, which makes requiring them to comply with these standards impractical. In addition, the majority of these facilities do not have a sufficient population and population density to meet the inhabited building standard.

2-4.6 **Policies and Procedures.** Policies and procedures are a critical adjunct to building standards. It is assumed that there are means to control access to controlled perimeters, underground parking, and other locations where vehicle access needs to be limited. It is further assumed that unusual packages or containers or improperly parked vehicles will be recognized as potential terrorist threats and appropriate reactive measures will be implemented to reduce the potential for casualties. Finally, it is

assumed that policies and procedures will be developed to support these and other related issues and that those policies and procedures will be incorporated into antiterrorism plans, training, and exercises.

Table 2-1 Levels of Protection – New Buildings

Level of Protection	Potential Structural Damage	Potential Door and Glazing Hazards	Potential Injury
Below AT standards	Severely damaged. Frame collapse/massive destruction. Little left standing.	Doors and windows fail and result in lethal hazards	Majority of personnel suffer fatalities.
Very Low	Heavily damaged - onset of structural collapse: Major deformation of primary and secondary structural members, but progressive collapse is unlikely. Collapse of non-structural elements.	Glazing will break and is likely to be propelled into the building, resulting in serious glazing fragment injuries, but fragments will be reduced. Doors may be propelled into rooms, presenting serious hazards.	Majority of personnel suffer serious injuries. There are likely to be a limited number (10% to 25%) of fatalities.
Low	Damaged – unreparable. Major deformation of non-structural elements and secondary structural members and minor deformation of primary structural members, but progressive collapse is unlikely.	Glazing will break, but fall within 1 meter of the wall or otherwise not present a significant fragment hazard. Doors may fail, but they will rebound out of their frames, presenting minimal hazards.	Majority of personnel suffer significant injuries. There may be a few (<10%) fatalities.
Medium	Damaged – repairable. Minor deformations of non-structural elements and secondary structural members and no permanent deformation in primary structural members.	Glazing will break, but will remain in the window frame. Doors will stay in frames, but will not be reusable.	Some minor injuries, but fatalities are unlikely.
High	Superficially damaged. No permanent deformation of primary and secondary structural members or non-structural elements.	Glazing will not break. Doors will be reusable.	Only superficial injuries are likely.

Table 2-2 Levels of Protection – Existing Buildings

Level of Protection	Potential Structural Damage	Potential Door and Glazing Hazards	Potential Injury
Below AT standards	Severely damaged. Frame collapse/massive destruction. Little left standing.	Doors and windows fail and result in lethal hazards	Majority of personnel suffer fatalities.
Very Low	Heavily damaged - onset of structural collapse: Major deformation of primary structural members, but progressive collapse is unlikely. Collapse of secondary structural members and non-structural elements.	Glazing will break and is likely to be propelled into the building, resulting in serious glazing fragment injuries, but fragments will be reduced. Doors may be propelled into rooms, presenting serious hazards.	Majority of personnel suffer serious injuries. There are likely to be a limited number (10% to 25%) of fatalities.
Low	Damaged – unrepairable. Major deformation of secondary structural members and minor deformation of primary structural members, but progressive collapse is unlikely. Collapse of non-structural elements.	Glazing will break and is likely to be propelled into the building, but should result in survivable glazing fragment injuries. Doors may fail, but they will rebound out of their frames, presenting minimal hazards.	Majority of personnel suffer significant injuries. There may be a few (<10%) fatalities.
Medium	Damaged – repairable. Minor deformations of secondary structural members and no permanent deformation in primary structural members. Major deformation of non-structural elements.	Glazing will break, but will remain in the window frame. Doors will stay in frames, but will not be reusable.	Some minor injuries, but fatalities are unlikely.
High	Superficially damaged. No permanent deformation of primary and secondary structural members or non-structural elements.	Glazing will not break. Doors will be reusable.	Only superficial injuries are likely.

Table 2-3 Levels of Protection – Expeditionary and Temporary Structures		
Level of Protection	Potential Structural Damage	Potential Injury
Below AT Standards	Severely damaged. Frame collapse/massive destruction. Little left standing.	Majority of personnel suffer fatalities.
Very Low	Heavily damaged. Major portions of the structure will collapse (over 50%). A significant percentage of secondary structural members will collapse (over 50%).	Majority of personnel suffer serious injuries. There are likely to be a limited number (10% to 25%) of fatalities.
Low	Damaged – unrepairable. Some sections of the structure may collapse or lose structural capacity (10 to 20% of structure).	Majority of personnel suffer significant injuries. There may be a few (<10%) fatalities.
Medium	Damaged – repairable. Minor to major deformations of both structural members and non-structural elements. Some secondary debris will be likely, but the structure remains intact with collapse unlikely.	Some minor injuries, but no fatalities are likely.
High	Superficially damaged. No permanent deformation of primary and secondary structural members or non-structural elements.	Only superficial injuries are likely.

2-4.7 **Design Criteria.** It is assumed that the provisions of these standards will be coordinated with all other applicable DoD building and design criteria and policies. Nothing in these standards should be interpreted to supersede the provisions of any other applicable building or design criteria. Where other criteria mandate more stringent requirements, it is assumed that the provisions of those criteria will be followed.

2-4.8 **Enhanced Fire Safety.** Historic fire scenarios and fuel loadings for various common buildings types that are the basis for requirements in building and life safety codes are likely to be much less severe than those experienced in terrorist attacks. Therefore, in the event of a terrorist attack, fire safety may be critical to the survival of building occupants and limiting the extent of building damage. Fire safety may be enhanced by designing buildings to limit the extent or severity of a fire and providing more effective egress routes. Changes to fire safety requirements, while they may be justifiable from an antiterrorism standpoint, are beyond the scope of these standards.

2-4.9 **Training.** It is assumed that key security and facility personnel will receive training in security engineering, antiterrorism, and related areas. Refer to the Security Engineering Working Group web site for available training and to DoD 2000.12-H for additional information on training issues. It is further assumed that all DoD personnel have been trained in basic antiterrorism awareness in accordance with DoDI 2000.16, that they are able to recognize potential threats, and that they know the proper courses of action should they detect a potential threat.

2-4.10 **Expeditionary and Temporary Structures.** Expeditionary and temporary structures are commonly built of either combinations of metal frames and fabric or wood frames and rigid walls.

It is assumed that most expeditionary and temporary structures cannot be retrofitted or hardened sufficiently for higher threats; therefore, unless adequate planning is done to obtain the needed space to achieve appropriate standoff, DoD personnel will be highly vulnerable to terrorist attack.

2-4.11 **Leased Buildings.** DoD personnel occupying leased buildings deserve the same level of protection as those in DoD-owned buildings; therefore, they should meet the requirements of these standards wherever possible. They must meet the requirements when the DoD occupancy meets the criteria in these standards. The thresholds in those criteria reflect the significance of higher populations of DoD personnel as targets versus the inherent risk reduction associated with dispersing DoD personnel.

APPENDIX A

DEFINITIONS

Access control. For the purposes of these standards, any combination of barriers, gates, electronic security equipment, and/or guards that can deny entry to unauthorized personnel or vehicles.

Access road. Any roadway such as a maintenance, delivery, service, emergency, or other special limited use road that is necessary for the operation of a building or structure.

Billeting. Any building or portion of a building in which 11 or more unaccompanied DOD personnel are routinely housed, including Temporary Lodging Facilities and military family housing permanently converted to unaccompanied housing. Billeting also applies to expeditionary and temporary structures with similar population densities and functions.

Building hardening. Enhanced conventional construction that mitigates threat hazards where standoff distance is limited. Building hardening may also be considered to include the prohibition of certain building materials and construction techniques.

Building separation. The distance between closest points on the exterior walls of adjacent buildings or structures.

Collateral damage. Injury to personnel or damage to buildings that are not the primary target of an attack.

Container structures. Structures built using shipping containers that are designed to withstand structural loadings associated with shipping, including Container Express (CONEX) and International Organization for Standardization (ISO) containers. Testing has shown that these structures behave similarly to buildings for the purposes of these standards.

Controlled perimeter. For the purposes of these standards, a physical boundary at which vehicle access is controlled at the perimeter of an installation, an area within an installation, or another area with restricted access. A physical boundary will be considered as a sufficient means to channel vehicles to the access control points. At a minimum, access control at a controlled perimeter requires the demonstrated capability to search for and detect explosives. Where the controlled perimeter includes a shoreline and there is no defined perimeter beyond the shoreline, the boundary will be at the mean high water mark.

Conventional construction. Building construction that is not specifically designed to resist weapons or explosives effects. Conventional construction is designed only to resist common loadings and environmental effects such as wind, seismic, and snow loads.

Design Basis Threat. The threat (aggressors, tactics, and associated weapons, tools, or explosives) against which assets within a building must be protected and upon which the security engineering design of the building is based.

DoD building. Any building or portion of a building (permanent, temporary, or expeditionary) owned, leased, privatized, or otherwise occupied, managed, or controlled by or for DoD. DoD buildings are categorized within these standards as uninhabited, inhabited, primary gathering and billeting.

DoD Components. The Office of the Secretary of Defense (OSD); the Military Departments (including their National Guard and Reserve Components); the Chairman, Joint Chiefs of Staff and Joint Staff; the Combatant Commands; the Office of the Inspector General of the Department of Defense; the Defense Agencies; the DoD Field Activities; and all other organizational entities within DoD.

DoD personnel. Any U.S. military, DoD civilian, or family member thereof, host-nation employees working for DoD, or contractors occupying DoD buildings.

Expeditionary structures. Those structures intended to be inhabited for no more than 1 year after they are erected. This group of structures typically include tents, Small and Medium Shelter Systems, Expandable Shelter Containers (ESC), ISO and CONEX containers, and General Purpose (GP) Medium tents and GP Large tents, etc.

Fabric covered/metal frame construction. A construction type that can be identified by a metal, load-bearing frame (usually aluminum) with some type of fabric (such as canvas) stretched or pulled over the frame. Examples of the types of structures that should be considered under this classification of structures include Frame-Supported Tensioned Fabric Structures (FSTFS); Tent, Extendable, Modular, Personnel (TEMPER Tents); and Small and Medium Shelter Systems (SSS and MSS); and air supported fabric structures. Testing has shown that for these fabric structures, the frame is what causes hazards.

Family housing. DoD buildings used as quarters for DoD personnel and their dependents.

Glazing. The part of a window or door assembly that normally transmits light, but not air.

Inhabited building. Buildings or portions of buildings routinely occupied by 11 or more DoD personnel and with a population density of greater than one person per 40 gross square meters (430 gross square feet). This density generally excludes industrial, maintenance, and storage facilities, except for more densely populated portions of those buildings such as administrative areas. The inhabited building designation also applies to expeditionary and temporary structures with similar population densities. In a building that meets the criterion of having 11 or more personnel, with portions that do not have sufficient population densities to qualify as inhabited buildings, those portions that have sufficient population densities will be considered inhabited buildings while the remainder of the building may be considered uninhabited, subject to provisions of these standards. An example would be a hangar with an administrative area within it. The

administrative area would be treated as an inhabited building while the remainder of the hangar could be treated as uninhabited. (Note: This definition differs significantly from the definition for inhabited building used by DoD 6055.9-STD and is not construed to be authorization to deviate from criteria of DoD 6055.9-STD.)

Laminated glass. Multiple sheets of glass bonded together by a bonding interlayer.

Level of protection. The degree to which an asset (person, equipment, object, etc.) is protected against injury or damage from an attack.

Mass notification. Capability to provide real-time information to all building occupants or personnel in the immediate vicinity of a building during emergency situations.

Medical transitional structures and spaces. Structures that are erected or leased for temporary occupancy to maintain mission-critical medical care during construction, renovation, modification, repair or restoration of an existing medical structure. Examples include urgent, ambulatory, and acute care operations.

Parking. Designated areas where vehicles may be left unattended.

Primary gathering building. Inhabited buildings routinely occupied by 50 or more DOD personnel and family housing with 13 or more family units per building. This designation applies to the entire portion of a building that meets the population density requirements for an inhabited building. For example, an inhabited portion of the building that has an area within it with 50 or more personnel is a primary gathering building for the entire inhabited portion of the building. The primary gathering building designation also applies to expeditionary and temporary structures with similar population densities.

Progressive collapse. A chain reaction failure of building members to an extent disproportionate to the original localized damage. Such damage may result in upper floors of a building collapsing onto lower floors.

Roadways. Any surface intended for motorized vehicle traffic.

Routinely occupied. For the purposes of these standards, an established or predictable pattern of activity within a building that terrorists could recognize and exploit.

Security engineering. The process of identifying practical, risk managed short and long-term solutions to reduce and/or mitigate dynamic manmade hazards by integrating multiple factors, including construction, equipment, manpower, and procedures.

Specific threat. Known or postulated aggressor activity focused on targeting a particular asset.

Standoff distance. A distance maintained between a building or portion thereof and the potential location for an explosive detonation.

Structure group. A cluster of expeditionary or temporary structures consisting of multiple rows of individual structures with 200 or fewer DoD personnel.

Structural glazed window systems. Window systems in which glazing is bonded to both sides of the window frame using an adhesive such as a high-strength, high-performance silicone sealant.

Superstructure. The supporting elements of a building above the foundation.

Temporary structures. Those structures that are erected with an expected occupancy of 3 years or less. This group of structures typically includes wood frame and rigid wall construction, and such things as Southeast Asia (SEA) Huts, hardback tents, ISO and CONEX containers, pre-engineered buildings, trailers, stress tensioned shelters, Expandable Shelter Containers (ESC), and Aircraft Hangars (ACH).

TNT equivalent weight. The weight of TNT (trinitrotoluene) that has an equivalent energetic output to that of a different weight of another explosive compound.

Transitional structures and spaces. Structures or spaces within buildings that are used to temporarily (less than 1 year) relocate occupants of another building while that building undergoes renovations, modifications, repairs, or restorations.

Unobstructed space. Space within 10 meters (33 feet) of an inhabited building that does not allow for concealment from observation of explosive devices 150 mm (6 inches) or greater in height.

APPENDIX B

DOD MINIMUM ANTITERRORISM STANDARDS ~~FOR~~ ~~FOR~~ NEW AND EXISTING BUILDINGS

B-1 SITE PLANNING. Operational, logistic, and security requirements must be integrated into the overall design of buildings, equipment, landscaping, parking, roads, and other features. The most cost-effective solution for mitigating explosive effects on buildings is to keep explosives as far as possible from them. Standoff distance must be coupled with appropriate building hardening to provide the necessary level of protection to DoD personnel. The following standards detail minimum standoff distances that when achieved will allow for buildings to be built with minimal additional construction costs. Where these standoff distances cannot be achieved because land is unavailable, these standards allow for building hardening to mitigate the blast effects. Costs and requirements for building hardening are addressed in the *DoD Security Engineering Manual*.

B-1.1 Standard 1. Minimum Standoff Distances. The minimum standoff distances apply to all new and existing (when triggered) DoD buildings covered by these standards. The minimum standoff distances are presented in Table B-1 and illustrated in Figures B-1 and B-2. Where the standoff distances in the “Conventional Construction Without Analysis” column of Table B-1 can be met, conventional construction may be used for the buildings without a specific analysis of blast effects, except as otherwise required in these standards. Where those distances are not available, an engineer experienced in blast-resistant design should analyze the building. Harden as necessary to mitigate the effects of the explosives indicated in Table B-1 at the achievable standoff distance to the appropriate level of protection. The appropriate levels of protection for each building category are shown in Table B-1, and are described in Tables 2-1 and 2-2 and in the *DoD Security Engineering Manual*. For new buildings, sStandoff distances of less than those shown in the “Conventional Construction With Analysis” column in Table B-1 are not allowed. For existing buildings, the standoff distances in the “Conventional Construction With Analysis” column of Table B-1 will be provided except where doing so is not possible. In those cases, lesser standoff distances may be allowed where the required level of protection can be shown to be achieved through analysis or can be achieved through construction or retrofit.

B-1.1.1 Controlled Perimeter. Measure the standoff distance from the controlled perimeter to the closest point on the building exterior or inhabited portion of the building.

B-1.1.2 Parking and Roadways. Standoff distances for parking and roadways are based on the assumption that there is a controlled perimeter at which larger vehicle bombs will be detected and kept from entering the controlled perimeter. Where there is a controlled perimeter, the standoff distances and explosive weight associated with parking and roadways in Table B-1 apply. If there is no controlled perimeter, assume that the larger explosive weights upon which the controlled perimeter standoff distances are based (explosive weight I from Table B-1) can access parking and roadways near buildings. Therefore, where there is no controlled perimeter, use standoff distances from parking and roadways according to the distances and the explosive weight

associated with controlled perimeters in Table B-1 Measure the standoff distance from the closest edge of parking areas and roadways to the closest point on the building exterior or inhabited portion of the building. In addition, the following apply:

B-1.1.2.1 All-New Inhabited Buildings. ~~Measure the standoff distance from the closest edge of parking areas and roadways to the closest point on the building exterior or inhabited portion of the building.~~ The minimum standoff for all new buildings regardless of hardening or analysis is 10 meters (33 feet) for both parking areas and roadways.

B-1.1.2.2 Existing Inhabited Buildings. Where possible, move parking and roadways away from existing buildings in accordance with the standoff distances and explosive weights in Table B-1. It is recognized, however, that moving existing parking areas and roadways or applying structural retrofits may be impractical; therefore, the following operational options are provided for existing inhabited buildings:

B-1.1.2.2.1 Parking Areas. Establish access control to portions of parking areas that are closer than the required standoff distance to ensure unauthorized vehicles are not allowed closer than the required standoff distance. For primary gathering buildings and billeting, if access control is provided to prevent unauthorized parking within the required standoff distance, controlled parking may be permitted as close as 10 meters (33 feet) without hardening or analysis. Controlled parking may be allowed closer if it can be shown by analysis that the required level of protection can be provided at the lesser standoff distance or if it can be provided through construction or retrofit.

B-1.1.2.2.2 Parking on Roadways. Eliminate parking on roadways within the required standoff distances along roads adjacent to existing buildings covered by these standards.

B-1.1.2.2.3 Parking for Family Housing. For existing family housing with 13 or more units per building within a controlled perimeter or where there is access control to the parking area, parking within the required standoff distances may be allowed where designated parking spaces are assigned for specific residents or residences. Do not label assigned parking spaces with names or ranks of the residents. Do not encroach upon existing standoff distances where the existing standoff distances are less than the required standoff distances. For example, where the required standoff distance is 10 meters, but existing designated parking ~~that~~ is only 8 meters (27 feet) from existing family housing, that parking- may be retained, but additional parking will not be allowed closer than 8 meters (27 feet.)

B-1.1.3 Parking and Roadway Projects. Where practical, all roadway and parking area projects should comply with the standoff distances from inhabited buildings in Table B-1. Where parking or roadways that are within the standoff distances in Table B-1 from existing buildings are being constructed, expanded, or relocated, do not allow those parking areas and roadways to encroach on the existing standoff distances of any existing inhabited building. That applies even where such projects are not associated with a building renovation, modification, repair, or restoration requiring compliance with these standards.

B-1.1.4 **Trash Containers.** Measure the standoff distance from the nearest point of the trash container or trash container enclosure to the closest point on the building exterior or inhabited portion of the building. Where the standoff distance is not available, harden trash enclosures to mitigate the direct blast effects and secondary fragment effects of the explosive on the building if the applicable level of protection can be proven by analysis. If trash enclosures are secured to preclude introduction of objects into the enclosures by unauthorized personnel, they may be located closer to the building as long as they do not violate the unobstructed space provisions of Standard 3. Openings in screening materials and gaps between the ground and screens or walls making up an enclosure must not be greater than 150 mm (6 inches).

B-1.2 **Standard 2. Building Separation.** Building separation requirements apply to new buildings and are established to minimize the possibility that an attack on one building causes injuries or fatalities in adjacent buildings. The separation distance is predicated on the potential use of indirect fire weapons.

B-1.2.1 **Billeting and Primary Gathering Buildings.** For all new billeting and primary gathering buildings, ensure that adjacent inhabited buildings are separated by at least the distances in Table B-1. Where it is necessary to encroach on those building separations, analyze the structure and provide hardened building components as necessary to mitigate the effects of the explosive indicated in Table B-1 to the appropriate level of protection shown in Table B-1. Levels of protection are described in Table 2-1 and in the *DoD Security Engineering Manual*.

B-1.2.2 **Other Inhabited Buildings.** There are no minimum separation distances required for antiterrorism purposes for inhabited buildings other than billeting and primary gathering buildings.

B-1.3 **Standard 3. Unobstructed Space.** It is assumed that aggressors will not attempt to place assets in areas near buildings where their explosive devices could be visually detected by building occupants observing the area around the building. Therefore, ensure that obstructions within 10 meters (33 feet) of inhabited buildings or portions thereof do not allow for concealment from observation of explosive devices 150 mm (6 inches) or greater in height. This does not preclude the placement of site furnishings or plantings around buildings. It only requires conditions such that any explosive devices placed in that space would be observable by building occupants. For existing buildings where the standoff distances for parking and roadways have been established at less than 10 meters (33 feet) in accordance with paragraph B-1.1.2.2, the unobstructed space may be reduced to be equivalent to that distance.

B-1.3.1 **Electrical and Mechanical Equipment.** The preferred location of electrical and mechanical equipment such as transformers, air-cooled condensers, and packaged chillers is outside the unobstructed space or on the roof. However this standard does not preclude placement within the unobstructed space as long the equipment provides no opportunity for concealment of explosive devices.

B-1.3.2 **Equipment Enclosures.** If walls or other screening devices with more than two sides are placed around electrical or mechanical equipment within the

unobstructed space, enclose the equipment on all four sides and the top. Openings in screening materials and gaps between the ground and screens or walls making up an enclosure will not be greater than 150 mm (6 inches). Secure any surfaces of the enclosures that can be opened so that unauthorized personnel cannot gain access through them.

B-1.4 **Standard 4. Drive-Up/Drop-Off Areas.** Some facilities require access to areas within the required standoff distance for dropping off or picking up people or loading or unloading packages and other objects. Examples that may require drive-up/drop-off include, but are not limited to, medical facilities, exchanges and commissaries, child care centers, and schools.

B-1.4.1 **Marking.** Where operational or safety considerations require drive-up or drop-off areas or drive through lanes near buildings, ensure those areas or lanes are clearly defined and marked and that their intended use is clear to prevent parking of vehicles in those areas.

B-1.4.2 **Unattended Vehicles.** Do not allow unattended vehicles in drive-up or drop-off areas or drive through lanes.

B-1.4.3 **Location.** Do not allow drive-through lanes for drive-up/drop-off to be located under any inhabited portion of a building.

B-1.5 **Standard 5. Access Roads.** Where access roads are necessary for the operation of a building (including those required for fire department access), ensure that access control measures are implemented to prohibit unauthorized vehicles from using access roads within the applicable standoff distances in Table B-1.

B-1.6 **Standard 6. Parking Beneath Buildings or on Rooftops.** Eliminate parking beneath inhabited buildings or on rooftops of inhabited buildings. Where very limited real estate makes such parking unavoidable, the following measures must be incorporated into the design for new buildings or mitigating measures must be incorporated into existing buildings to achieve an equivalent level of protection.

B-1.6.1 **Access Control.** Ensure that access control measures are implemented to prohibit unauthorized personnel and vehicles from entering parking areas.

B-1.6.2 **Structural Elements.** Ensure that the floors beneath or roofs above inhabited areas and all other adjacent supporting structural elements will not fail from the detonation in the parking area of an explosive equivalent to explosive weight II in Table B-1.

B-1.6.3 **Progressive Collapse.** All structural elements within and adjacent to the parking area will be subject to all progressive collapse provisions of Standard 7 except that the exterior member removal provision will also apply to interior vertical or horizontal load carrying elements. Apply those provisions based on an explosive equivalent to explosive weight II in Table B-1.

B-2 **STRUCTURAL DESIGN.** If the minimum standoff distances are achieved, conventional construction should minimize the risk of mass casualties from a terrorist attack. Even if those standoff distances can be achieved, however, incorporate the following additional structural issues that must be incorporated into building designs to ensure that buildings do not experience progressive collapse.

B-2.1 **Standard 7. Progressive Collapse Avoidance.** Progressive collapse is considered to be significant risk for buildings of three or more stories. Basements will be considered stories if they have one or more exposed walls. For all new and existing inhabited buildings of three stories or more, design the superstructure to sustain local damage with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage. Achieve this through an arrangement of the structural elements that provides stability to the entire structural system by transferring loads from any locally damaged region to adjacent regions capable of resisting those loads without collapse. Accomplish this by providing sufficient continuity, redundancy, or energy dissipating capacity (ductility, damping, hardness, etc.), or a combination thereof, in the members and connections of the structure. For further guidance, refer to American Society of Civil Engineers Standard 7-98 and to detailed guidance in the *DoD Security Engineering Manual*. In addition, the measures below apply to all buildings of three or more stories.

B-2.1.1 **Columns and Walls.** Design all exterior vertical load-carrying columns and walls to sustain a loss of lateral support at any of the floor levels by adding one story height to the nominal unsupported length. While this standard is based on the assumption of an external threat, where parking beneath buildings is unavoidable, this provision also applies to internal vertical load carrying columns and walls.

B-2.1.2 **Exterior Member Removal.** Analyze the structure to ensure it can withstand removal of one primary exterior vertical or horizontal load-carrying element (i.e., a column or a beam) without progressive collapse.

B-2.1.3 **Floors.** Design all floors with improved capacity to withstand load reversals due to explosive effects by designing them to withstand a net uplift equal to the dead load plus one-half the live load.

B-2.2 **Standard 8. Structural Isolation.**

B-2.2.1 **Building Additions.** Design all additions to existing buildings to be structurally independent from the adjacent existing building. This will minimize the possibility that collapse of one part of the building will affect the stability of the remainder of the building. Alternatively, verify through analysis that collapse of either the addition or the existing building will not result in collapse of the remainder of the building.

B-2.2.2 **Portions of Buildings.** Where there are areas of buildings that do not meet the criteria for inhabited buildings, design the superstructures of those areas to be structurally independent from the inhabited area. This will minimize the possibility that collapse of the uninhabited areas of the building will affect the stability of the superstructure of the inhabited portion of the building. Alternatively, verify through

analysis that collapse of uninhabited portions of the building will not result in collapse of any portion of the building covered by this standard. This standard is not mandatory for existing structures, but it should be implemented where possible

B-2.3 **Standard 9. Building Overhangs.** Avoid building overhangs with inhabited spaces above them where people could gain access to the area underneath the overhang. Where such overhangs must be used, incorporate the following measures into the design for new buildings. Incorporate mitigating measures into existing buildings to achieve an equivalent level of protection.

B-2.3.1 **Parking and Roadway Restrictions.** Ensure that there are no roadways or parking areas under overhangs.

**Table B-1 Minimum Standoff Distances and Separation
for New and Existing Buildings**

Location	Building Category	Standoff Distance or Separation Requirements			
		Applicable Level of Protection	Conventional Construction without Analysis	Conventional Construction with Analysis ⁽¹⁾	Applicable Explosive Weight ⁽²⁾
Controlled Perimeter or Parking and Roadways without a Controlled Perimeter	Billeting	Low	45 m ⁽⁴⁾ (148 ft.)	25 m ⁽⁴⁾ (82 ft.)	I
	Primary Gathering Building	Low	45 m ^{(4) (5)} (148 ft.)	25 m ^{(4) (5)} (82 ft.)	I
	Inhabited Building	Very Low	25 m ⁽⁴⁾ (82 ft.)	10 m ⁽⁴⁾ (33 ft.)	I
Parking and Roadways within a Controlled Perimeter	Billeting	Low	25 m ⁽⁴⁾ (82 ft.)	10 m ⁽⁴⁾ (33 ft.)	II
	Primary Gathering Building	Low	25 m ^{(4) (5)} (82 ft.)	10 m ^{(4) (5)} (33 ft.)	II
	Inhabited Building	Very Low	10 m ⁽⁴⁾ (33 ft.)	10 m ⁽⁴⁾ (33 ft.)	II
Trash containers	Billeting	Low	25 m (82 ft.)	10 m (33 ft.)	II
	Primary Gathering Building	Low	25 m (82 ft.)	10 m (33 ft.)	II
	Inhabited Building	Very Low	10 m (33 ft.)	10 m (33 ft.)	II
Building Separation (for new buildings only)	Billeting	Low	10 m (33 ft.)	No antiterrorism minimum	III ⁽³⁾
	Primary Gathering Building	Low	10 m (33 ft.)	No antiterrorism minimum	III ⁽³⁾
	Inhabited Building	Very Low	No antiterrorism minimum	No antiterrorism minimum	Not applicable

(1) Even with analysis, Standoff distances less than those in this column are not allowed for new buildings, but are allowed for existing buildings if constructed/retrofitted to provide the required level of protection at the reduced standoff distance, even with analysis.

(2) See UFC 4-010-10, for the specific explosive weights (kg/pounds of TNT) associated with designations – I, II, III.
UFC 4-010-10 is For Official Use Only (FOUO)

(3) Explosive for building separation is an indirect fire (mortar) round.

(4) For existing buildings, see paragraph B-1.1.2.2.

(5) For existing family housing, see paragraph B-1.1.2.2.3.

Figure B-1 Standoff Distances and Building Separation – Controlled Perimeter

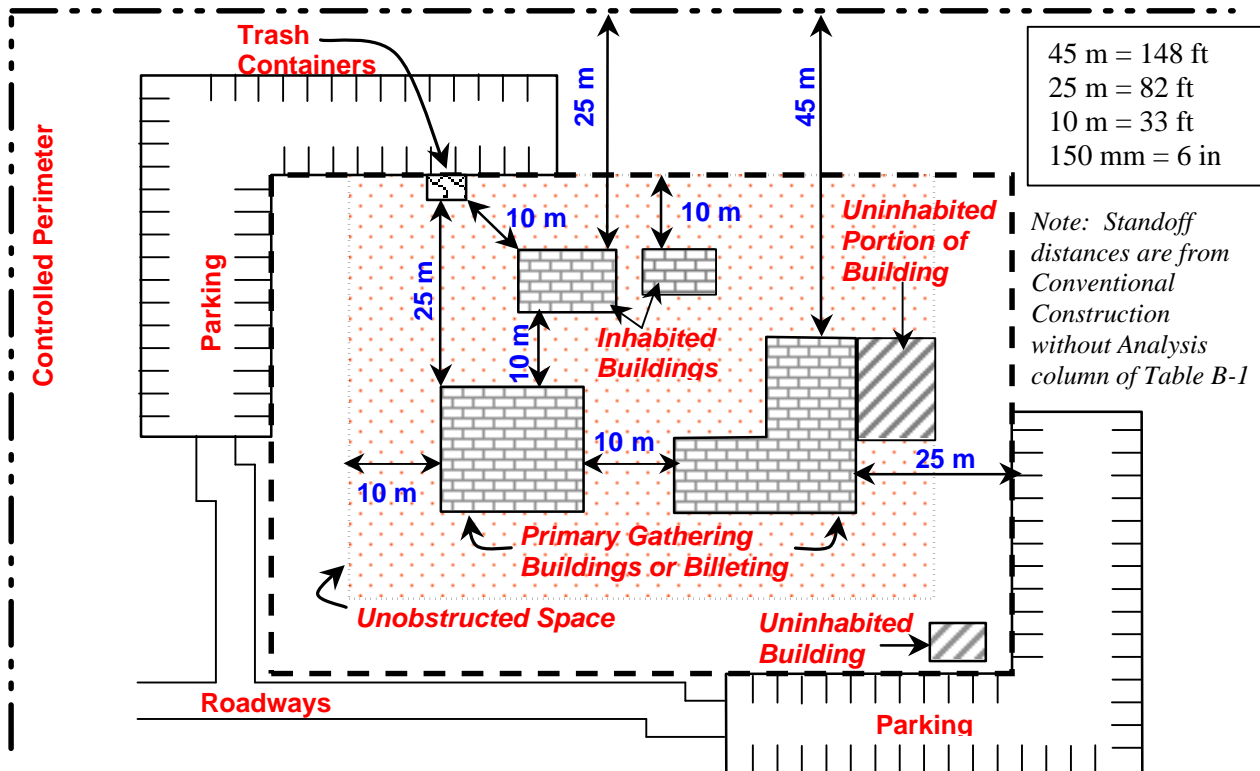
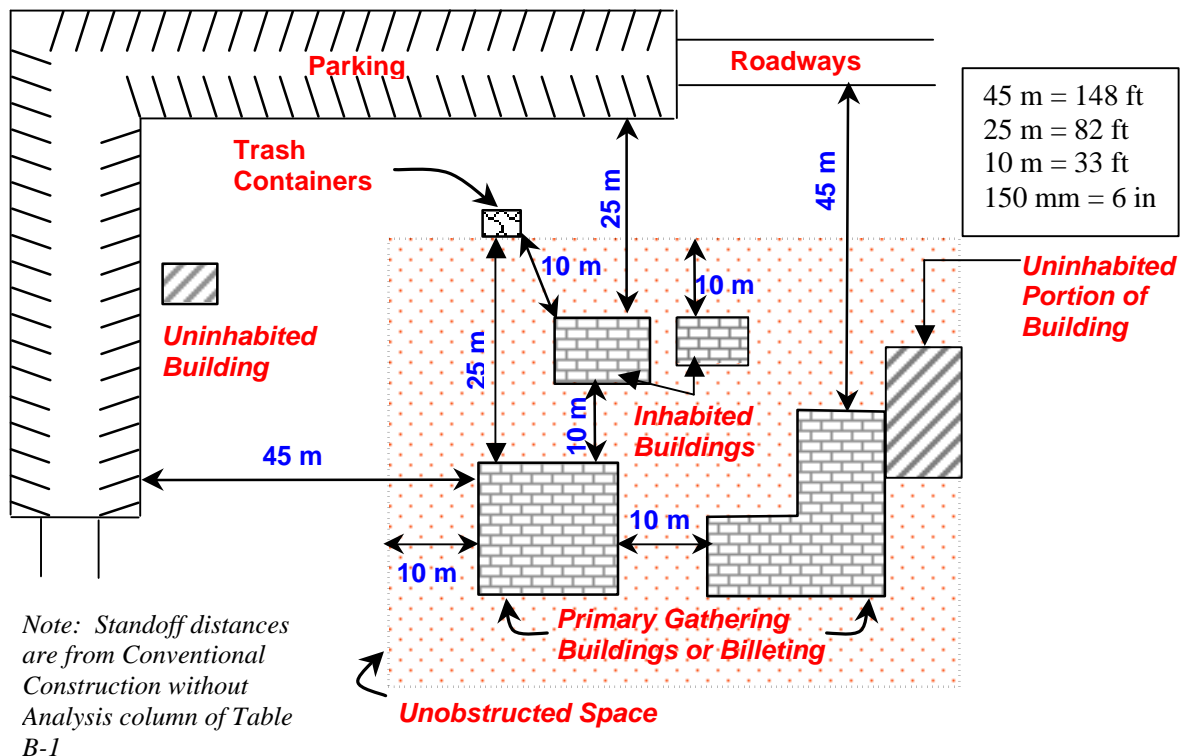


Figure B-2 Standoff Distances and Building Separation – No Controlled Perimeter



B-2.3.2 **Floors.** Ensure that the floors beneath inhabited areas will not fail from the detonation underneath the overhang of an explosive equivalent to explosive weight II where there is a controlled perimeter and explosive weight I for an uncontrolled perimeter. Explosive weights I and II are identified in Table B-1.

B-2.3.3 **Superstructure.** The progressive collapse provisions of Standard 7, including the provision for loss of lateral support for vertical load carrying elements, will include all structural elements within and adjacent to the overhang.

B-2.4 **Standard 10. Exterior Masonry Walls.** Unreinforced masonry walls are prohibited for the exterior walls of new buildings. A minimum of 0.05 percent vertical reinforcement with a maximum spacing of 1200 mm (48 in) will be provided. For existing buildings, implement mitigating measures to provide an equivalent level of protection.

B-3 **ARCHITECTURAL DESIGN.** Even where the minimum standoff distances are achieved, many aspects of building layout and other architectural design issues must be incorporated to improve overall protection of personnel inside buildings.

B-3.1 **Standard 11. Windows and Glazed Doors.** To minimize hazards from flying glass fragments, apply the provisions for glazing and window frames below for all new and existing inhabited buildings covered by these standards. Windows and frames must work as a system to ensure that their hazard mitigation is effective. These provisions apply even if the minimum standoff distances are met.

B-3.1.1 **Glazing.** Use a minimum of 6-mm (1/4-in) nominal laminated glass for all exterior windows and glazed doors. The 6-mm (1/4-in) laminated glass consists of two nominal 3-mm (1/8-in) glass panes bonded together with a minimum of a 0.75-mm (0.030-inch) polyvinyl-butyl (PVB) interlayer. For insulated glass units, use 6 mm (1/4 inch) laminated glass inner pane as a minimum. For alternatives to the 6-mm (1/4-in) laminated glass that provide equivalent levels of protection, refer to the *DoD Security Engineering Manual*.

B-3.1.2 **Window Frames.** Provide frames and mullions of aluminum or steel. To ensure that the full strength of the PVB inner layer is engaged, design frames, mullions, and window hardware to resist a static load of 7 kilopascals (1 lb per square in) applied to the surface of the glazing. Frame and mullion deformations shall not exceed 1/160 of the unsupported member lengths. The glazing shall have a minimum frame bite of 9.5-mm (3/8-in) for structural glazed window systems and 25-mm (1-in) for window systems that are not structurally glazed. Design frame connections to surrounding walls to resist a combined ultimate loading consisting of a tension force of 35-kN/m (200-lbs/in) and a shear force of 13-kN/m (75 lbs/in). Design supporting elements and their connections based on their ultimate capacities. In addition, because the resulting dynamic loads are likely to be dissipated through multiple mechanisms, it is not necessary to account for reactions from the supporting elements in the design of the remainder of the structure. Alternatively, use frames that provide an equivalent level of performance. For existing buildings, this may require replacement or significant modification of window frames, anchorage, and supporting elements.

B-3.1.3 **Mitigation.** Where the minimum standoff distances cannot be met, provide glazing and frames that will provide an equivalent level of protection to that provided by the glazing above as described in Tables 2-1 and 2-2 for the applicable explosive weight in Table B-1.

B-3.1.4 **Window Replacement Projects.** Whenever window or door glazing is being replaced in existing inhabited buildings as part of a planned window or glazing replacement project, whether or not the building meets the triggers in paragraph 1-6.2, install glazing that meets all of the requirements above.

B-3.2 **Standard 12. Building Entrance Layout.** The areas outside of installations are commonly not under the direct control of the installations. Where the main entrances to buildings face installation perimeters, people entering and exiting the buildings are vulnerable to being fired upon from vantage points outside the installations. To mitigate those vulnerabilities apply the following measures:

B-3.2.1 **New Buildings.** For new inhabited buildings, ensure that the main entrance to the building does not face an installation perimeter or other uncontrolled vantage points with direct lines of sight to the entrance.

B-3.2.2 **Existing Buildings.** For existing inhabited buildings where the main entrance faces an installation perimeter, either use a different entrance as the main entrance or screen that entrance to limit the ability of potential aggressors to target people entering and leaving the building.

B-3.3 **Standard 13. Exterior Doors.** For all new and existing buildings covered by these standards, ensure that all exterior doors into inhabited areas open outwards. By doing so, the doors will seat into the door frames in response to an explosive blast, increasing the likelihood that the doors will not enter the buildings as hazardous debris.

B-3.4 **Standard 14. Mailrooms.** The following measures address the location of rooms to which mail is delivered or in which mail is handled in new and existing inhabited buildings. The measures involve limiting collateral damage and injuries and facilitating future upgrades to enhance protection should they become necessary.

B-3.4.1 **Location.** Where a new or existing building covered by these standards must have a mailroom, locate that mailroom on the perimeter of the building. By locating the mailroom on the building perimeter there is an opportunity to modify it in the future if a mail bomb threat is identified. Where mailrooms are located in the interior of buildings, few retrofit options are available for mitigating the mail bomb threat.

B-3.4.2 **Proximity.** Locate mailrooms as far from heavily populated areas of the building and critical infrastructure as possible. This measure will minimize injuries and damage if a mail bomb detonates in the mailroom. Further, it will reduce the potential for wider dissemination of hazardous agents. These apply where the mailroom is not specifically designed to resist those threats.

B-3.5 **Standard 15. Roof Access.** For all new and existing inhabited buildings covered by these standards, control access to roofs to minimize the possibility of aggressors placing explosives or chemical, biological, or radiological agents there or otherwise threatening building occupants or critical infrastructure.

B-3.5.1 **New Buildings.** For new buildings eliminate all external roof access by providing access from internal stairways or ladders, such as in mechanical rooms.

B-3.5.2 **Existing Buildings.** For existing buildings, eliminate external access where possible or secure external ladders or stairways with locked cages or similar mechanisms.

B-3.6 **Standard 16. Overhead Mounted Architectural Features.** For all new and existing buildings covered by these standards, ensure that overhead mounted features weighing 14 kilograms (31 pounds) or more are mounted to minimize the likelihood that they will fall and injure building occupants. Mount all such systems so that they resist forces of 0.5 times the component weight in any direction and 1.5 times the component weight in the downward direction. This standard does not preclude the need to design architectural feature mountings for forces required by other criteria such as seismic standards.

B-4 **ELECTRICAL AND MECHANICAL DESIGN.** Electrical and mechanical design standards address limiting damage to critical infrastructure, protecting building occupants against chemical, biological, and radiological threats, and notifying building occupants of threats or hazards.

B-4.1 **Standard 17. Air Intakes.** Air intakes to heating, ventilation, and air conditioning (HVAC) systems that are designed to move air throughout a building that are at ground level provide an opportunity for aggressors to easily place contaminants that could be drawn into the building.

B-4.1.1 **New Buildings.** For all new inhabited buildings covered by this document locate all air intakes at least 3 meters (10 feet) above the ground.

B-4.1.2 **Existing Buildings.** The above requirement is recommended, but not mandatory, for existing inhabited buildings covered by these standards.

B-4.2 **Standard 18. Emergency Air Distribution Shutoff.** For all new and existing inhabited buildings, provide an emergency shutoff switch in the HVAC control system that can immediately shut down air distribution throughout the building. Locate the switch (or switches) to be easily accessible by building occupants. Providing such a capability will allow the facility manager or building security manager to limit the distribution of airborne contaminants that may be introduced into the building.

B-4.3 **Standard 19. Utility Distribution and Installation.** Utility systems can suffer significant damage when subjected to the shock of an explosion. Some of these utilities may be critical for safely evacuating personnel from the building or their destruction could cause damage that is disproportionate to other building damage

resulting from an explosion. To minimize the possibility of the above hazards, apply the following measures:

B-4.3.1 **Utility Routing.** For all new inhabited buildings, route critical or fragile utilities so that they are not on exterior walls or on walls shared with mailrooms. This requirement is recommended, but not mandatory, for existing buildings.

B-4.3.2 **Redundant Utilities.** Where redundant utilities are required in accordance with other requirements or criteria, ensure that the redundant utilities are not collocated or do not run in the same chases. This minimizes the possibility that both sets of utilities will be adversely affected by a single event.

B-4.3.3 **Emergency Backup Systems.** Where emergency backup systems are required in accordance with requirements or criteria, ensure that they are located away from the system components for which they provide backup.

B-4.4 **Standard 20. Equipment Bracing.** Mount all overhead utilities and other fixtures weighing 14 kilograms (31 pounds) or more to minimize the likelihood that they will fall and injure building occupants. Design all equipment mountings to resist forces of 0.5 times the equipment weight in any direction and 1.5 times the equipment weight in the downward direction. This standard does not preclude the need to design equipment mountings for forces required by other criteria such as seismic standards.

B-4.5 **Standard 21. Under Building Access.** To limit opportunities for aggressors placing explosives underneath buildings, ensure that access to crawl spaces, utility tunnels, and other means of under building access is controlled.

B-4.6 **Standard 22. Mass Notification.** All inhabited buildings must have a timely means to notify occupants of threats and instruct them what to do in response to those threats.

B-4.6.1 **New Buildings.** All new inhabited buildings must have a capability to provide real-time information to building occupants or personnel in the immediate vicinity of the building during emergency situations. The information relayed must be specific enough to determine the appropriate response actions. Any system, procedure, or combination thereof that provides this capability will be acceptable under this standard.

B-4.6.2 **Existing Buildings.** For existing buildings, the above requirement is mandatory for primary gathering buildings and billeting, but recommended for all inhabited buildings.

APPENDIX C

RECOMMENDED ADDITIONAL ANTITERRORISM MEASURES FOR NEW AND EXISTING BUILDINGS

C-1 **SITE PLANNING.** The following additional measures, if implemented, will significantly enhance site security with little increase in cost and should be considered for all new and existing inhabited buildings.

C-1.1 **Recommendation 1. Vehicle Access Points.** The first line of defense in limiting opportunities for aggressors to get vehicles close to DoD buildings is at vehicle access points at the controlled perimeter, in parking areas, and at drive-up/drop-offs points. Keep the number of access points to the minimum necessary for operational or life safety purposes. This will limit the number of points at which access may have to be controlled with barriers and/or personnel in increased threat environments or if the threat increases in the future.

C-1.2 **Recommendation 2. High-Speed Vehicle Approaches.** The energy of a moving vehicle increases with the square of its velocity; therefore, minimizing a vehicle's speed allows vehicle barriers to be lighter and less expensive should vehicle barriers ever become necessary. To facilitate reductions in vehicle speeds in the future, ensure there are no unobstructed vehicle approaches perpendicular to inhabited buildings at the required parking and roadway standoff distances.

C-1.3 **Recommendation 3. Vantage Points.** Vantage points are natural or man-made positions from which potential aggressors can observe and target people or other assets in and around a building. Identify vantage points outside the control of personnel in the targeted building and either eliminate them or provide means to avoid exposure to them. Means to avoid exposure may include actions such as reorienting the building or shielding people or assets in and around the building using such measures as reflective glazing, walls, privacy fencing, or vegetation.

C-1.4 **Recommendation 4. Drive-Up/Drop Off.** Locate these points away from large glazed areas of the building to minimize the potential for hazardous flying glass fragments in the event of an explosion. For example, locate the lane at an outside corner of the building or otherwise away from the main entrance. Coordinate the drive-up/drop-off point with the building geometry to minimize the possibility that explosive blast forces could be increased due to being trapped or otherwise concentrated. For further discussion of this issue, refer to the *DoD Security Engineering Manual*.

C-1.5 **Recommendation 5. Building Location.** Activities with large visitor populations provide opportunities for potential aggressors to get near buildings with minimal controls, and therefore, limit opportunities for early detection. Maximize separation distance between inhabited buildings and areas with large visitor populations.

C-1.6 **Recommendation 6. Railroad Location.** Avoid sites for inhabited buildings that are close to railroads. Where railroads are in the vicinity of existing

buildings, provide standoff distances between the railroad and any inhabited buildings based on the standoff distances and explosive weight associated with controlled perimeters in Table B-1. Where those standoff distances are not available, and since moving existing railroads may be difficult and prohibitively expensive, ensure that there are procedures in place to prohibit trains from stopping in the vicinity of inhabited structures.

C-1.7 **Recommendation 7. Access Control for Family Housing.** For new family housing areas, provide space for controlling access at the perimeter of the housing area so that a controlled perimeter can be established there if the need arises in the future.

C-1.8 **Recommendation 8. Standoff for Family Housing.** For new family housing construction, maintain a minimum standoff distance of 25 meters (82 feet) from installation perimeters and roads, streets, or highways external to housing areas.

C-1.9 **Recommendation 9. Minimize Secondary Debris.** To reduce the hazard of flying debris in the event of an explosion, eliminate unrevetted barriers and site furnishings in the vicinity of inhabited structures that are accessible to vehicle traffic. Revet exposed barriers and site furnishings near inhabited buildings with a minimum of 1 meter (3 feet) of soil or equivalent alternative techniques to prevent fragmentation hazards in the event of an explosion.

C-2 **STRUCTURAL AND ARCHITECTURAL DESIGN.** The following additional measures, if implemented, will significantly enhance building occupants' safety and security with little increase in cost. Consider these measures for all new and existing inhabited buildings.

C-2.1 **Recommendation 10. Structural Redundancy.** Unexpected terrorist acts can result in local collapse of building structural components. To limit the extent of collapse of adjacent components, utilize highly redundant structural systems such as moment resisting frames, detail connections to provide continuity across joints equal to the full structural capacity of connected members, and detail members to accommodate large displacements without complete loss of strength. This recommendation is consistent with paragraph B-2.1 (Standard 7) for preventing progressive collapse, but recommends selection of certain structural systems and greater attention to structural details.

C-2.2 **Recommendation 11. Internal Circulation.** Design circulation within buildings to provide visual detection and monitoring of unauthorized personnel approaching controlled areas or occupied spaces.

C-2.3 **Recommendation 12. Visitor Control.** Controlling visitor access maximizes the possibility of detecting potential threatening activities. Keep locations in buildings where visitor access is controlled away from sensitive or critical areas, areas where high-risk or mission-critical personnel are located, or other areas with large population densities of DoD personnel.

C-2.4 **Recommendation 13. Asset Location.** To minimize exposure to direct blast effects and potential impacts from hazardous glass fragments and other potential debris, locate critical assets and mission-critical or high-risk personnel away from the building exterior.

C-2.5 **Recommendation 14. Room Layout.** In rooms adjacent to the exterior of the building, position personnel and critical equipment to minimize exposure to direct blast effects and potential impacts from hazardous glass fragments and other potential debris.

C-2.6 **Recommendation 15. External Hallways.** Since doors can become hazardous debris during explosive blast events, doors designed to resist blast effects are expensive, and external hallways have large numbers of doors leading into inhabited areas, avoid exterior hallway configurations for inhabited structures.

C-2.7 **Recommendation 16. Windows.** To minimize the potential for glazing hazards, minimize the size and number of windows for new construction.

APPENDIX D

DOD MINIMUM ANTITERRORISM STANDARDS FOR EXPEDITIONARY AND TEMPORARY STRUCTURES

D-1 SITE PLANNING STANDARDS. All the standards that are unique to expeditionary and temporary structures pertain to site planning. Integrate operational, logistic, and security requirements into the overall configuration of structures, equipment, landscaping, parking, roads, and other features. The most cost-effective solution for mitigating explosive effects on expeditionary and temporary structures is to keep explosives as far away as possible. This is especially critical for these types of structures because hardening may or may not be possible. Dispersed layouts reduce risks from a variety of threats by taking full advantage of terrain and site conditions; therefore, nothing in these standards is intended to discourage dispersal. Costs and requirements for expeditionary and temporary structure hardening are addressed in the *DoD Security Engineering Manual*.

D-1.1 Standard 1. Minimum Standoff Distances. The minimum standoff distances apply to all new and existing DoD expeditionary and temporary structures covered by these standards except as otherwise stated below. The minimum standoff distances are presented in Table D-1 and illustrated in Figure D-1. Except as otherwise required in these standards, where the standoff distances in Table D-1 can be provided, use conventional expeditionary and temporary structures without a specific analysis of blast effects. Where those distances are not available, analysis of the structure by an engineer experienced in blast-resistant design and hardened as necessary (in those cases which permit structure hardening) to mitigate the effects of the explosives indicated in Table D-1 at the achievable standoff distance to the appropriate level of protection is required. The appropriate levels of protection for each structure category are shown in Table D-1, and are described in Table 2-3 and in the *DoD Security Engineering Manual*. The two structure types in Table D-1 respond in fundamentally different ways to explosive effects. Standoff distances in Table D-1 reflect those differences.

D-1.1.1 Controlled Perimeter. Measure the standoff distance from the closest point on the structure exterior to the controlled perimeter.

D-1.1.1.1 Container Structures. For these structures, apply the guidance in Appendix B.

D-1.1.1.2 Fabric Covered/Metal Frame Construction and other Expeditionary or Temporary Structures. Provide the standoff distance from Table D-1 for the applicable structure category.

D-1.1.2 Parking and Roadways. Standoff distances for parking and roadways are based on the assumption that there is a controlled perimeter at which larger vehicle bombs will be detected and kept from entering the controlled perimeter. Where there is a controlled perimeter, the standoff distances and explosive weight associated with parking and roadways in Table D-1 apply unless otherwise stated below. If there is no

controlled perimeter, assume that the larger explosive weights upon which the controlled perimeter standoff distances are based (explosive weight I from Table D-1) can access parking and roadways near buildings. Therefore, where there is no controlled perimeter, use standoff distances from parking and roadways according to the distances and the explosive weight associated with controlled perimeters in Table D-1.

D-1.1.2.1 **Container Structures.** For these structures, apply the guidance in Appendix B.

D-1.1.2.2 **Fabric Covered/Metal Frame Construction and other Expeditionary or Temporary Structures.** Measure the standoff distance from the closest point on the structure exterior to the closest edge of parking areas and roadways. The minimum standoff for all structures regardless of hardening or analysis is 10 meters (33 feet).

D-1.1.2.3 **Existing Fabric Covered/Metal Frame Construction and other Expeditionary or Temporary Structures.** Moving existing parking areas and roadways may be difficult to achieve and structural retrofits to existing structures may be prohibitively expensive or technically impossible; therefore, the following operational options are provided for existing inhabited structures where the standoff distances in Table D-1 are impractical to achieve.

D-1.1.2.3.1 **Parking Areas.** Establish access control to portions of parking areas to ensure unauthorized vehicles are not allowed closer than the required standoff distance. For primary gathering structures and billeting, if access control is provided to prevent unauthorized parking within the required standoff distance, permit controlled parking as close as 10 meters (33 feet) without hardening or analysis.

D-1.1.2.3.2 **Roadways.** Eliminate parking within the required standoff distances along roads adjacent to existing structures covered by these standards.

D-1.1.3 **Trash Containers.** Measure the standoff distance from the nearest point of the trash container or trash container enclosure to the closest point on the structure exterior. Where the standoff distance is not available, hardening of trash enclosures to mitigate the direct blast effects and secondary fragment effects of the explosive on the structure is acceptable, if the applicable level of protection can be proven by analysis. If trash enclosures are secured to preclude introduction of objects into the enclosures by unauthorized personnel, locate them closer to the structure as long as they do not violate the unobstructed space provisions of Standard 3 below. Openings in screening materials and gaps between the ground and screens or walls making up an enclosure will not be greater than 150 mm (6 inches).

D-1.1.3.1 **Container Structures.** For these structures, apply the guidance in Appendix B.

D-1.1.3.2 **Fabric Covered/Metal Frame Construction and other Expeditionary or Temporary Structures.** Provide the standoff distance from Table D-1 for the applicable structure category.

D-1.2 **Standard 2. Structure Separation.** Structure separation requirements are established to minimize the possibility that an attack on one structure causes injuries or fatalities in adjacent structures. The separation distance is predicated on the potential use of indirect fire weapons.

D-1.2.1 **Billeting and Primary Gathering Structures.**

D-1.2.1.1 **Container Structures.** For these structures, apply the guidance in Appendix B.

D-1.2.1.2 **Fabric Covered/Metal Frame Construction and other Expeditionary or Temporary Structures.** For all new billeting and primary gathering structures, ensure that adjacent structures are separated by at least the distances in Table D-1. Where it is necessary to encroach on those structure separations, analyze the structure and provide hardened structure components as necessary to mitigate the effects of the explosive indicated in Table D-1 to the appropriate level of protection as shown in Table D-1. Levels of protection are described in Table 2-3 and in the *DoD Security Engineering Manual*.

D-1.2.2 **Other Inhabited Structures.** There are no minimum separation distances required for antiterrorism for inhabited buildings other than billeting and primary gathering structures.

D-1.3 **Standard 3. Unobstructed Space.** Keep areas within 10 meters (33 feet) of all expeditionary and temporary structures free of items other than those that are part of the utilities and other supporting infrastructure.

D-2 **ADDITIONAL STANDARDS.** In addition to the specific standards detailed in this appendix, apply the standards from Appendix B to expeditionary and temporary structures as follows:

D-2.1 **Fabric Covered/Metal Frame Construction and other Expeditionary or Temporary Structures.** Apply the following standards from Appendix B to these structures:

D-2.1.1 **Standard 4. Drive-Up/Drop Off Areas.**

D-2.1.2 **Standard 5. Access Roads.**

D-2.1.3 **Standard 11. Windows and Glazed Doors.**

D-2.1.4 **Standard 12. Building Entrance Layout.**

D-2.1.5 **Standard 20. Equipment Bracing.**

D-2.1.6 **Standard 22. Mass Notification.**

D-2.2 **Container Structures.** For these structures, all standards in Appendix B apply.

D-3 **ANTITERRORISM RECOMMENDATIONS.** Apply all recommendations except for Recommendation 7 (Access control for family housing) and Recommendation 8 (Standoff for family housing) from Appendix C to all expeditionary and temporary structures.

**Table D-1 Minimum Standoff Distances and Separation
for Expeditionary and Temporary Structures**

Location	Structure Category	Standoff Distance or Separation Requirements			
		Applicable Level of Protection	Fabric Covered/Metal Frame Structures ⁽¹⁾	Other Expeditionary and Temporary Structures ⁽¹⁾⁽²⁾	Applicable Explosive Weight (TNT) ⁽³⁾
Controlled Perimeter or Parking and Roadways without a Controlled Perimeter	Billeting	Low	31 m (102 ft.)	71 m (233 ft.)	I
	Primary Gathering Structure	Low	31 m (102 ft.)	71 m (233 ft.)	I
	Inhabited Structure	Very Low	24 m (79 ft.)	47 m (154 ft.)	I
Parking and Roadways within a Controlled Perimeter	Billeting	Low	14 m (46 ft.)	32 m (105 ft.)	II
	Primary Gathering Structure	Low	14 m (46 ft.)	32 m (105 ft.)	II
	Inhabited Structure	Very Low	10 m (33 ft.)	23 m (75 ft.)	II
Trash containers	Billeting	Low	14 m (46 ft.)	32 m (105 ft.)	II
	Primary Gathering Structure	Low	14 m (46 ft.)	32 m (105 ft.)	II
	Inhabited Structure	Very Low	10 m (33 ft.)	23 m (75 ft.)	II
Structure Separation ⁽⁴⁾	Separation between Structure Groups	Low	18 m (59 ft.)	18 m (59 ft.)	III ⁽⁵⁾
	Separation between Structure Rows	Low	9 m (30 ft.)	9 m (30 ft.)	III ⁽⁵⁾
	Separation between Structures in a Row	Very Low	3.5 m (12 ft.)	3.5 m (12 ft.)	III ⁽⁵⁾

(1) See Definitions for a complete description of these structure types.

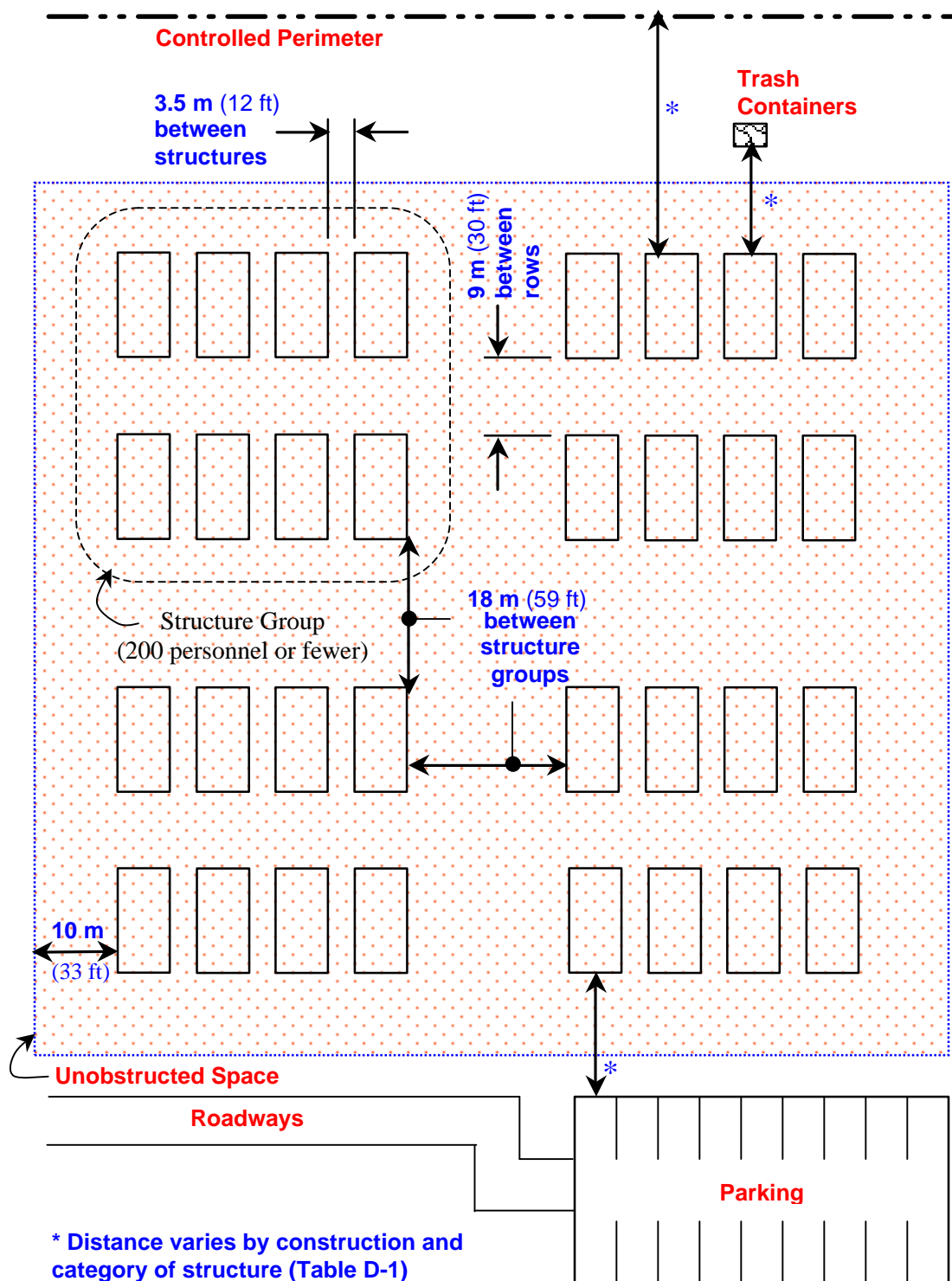
(2) For container structures, Appendix B applies.

(3) See UFC 4-010-10, for the specific explosive weights (kg/pounds of TNT) associated with designations – I, II, III. UFC 4-010-10 is For Official Use Only (FOUO)

(4) Applies to Billeting and Primary Gathering Structures only. No minimum separation distances for other inhabited structures.

(5) Explosive for building separation is an indirect fire (mortar) round.

Figure D-1 Standoff Distances and Separation for Expeditionary and Temporary Structures (except container structures)



APPENDIX I

WATER FLOW TESTS

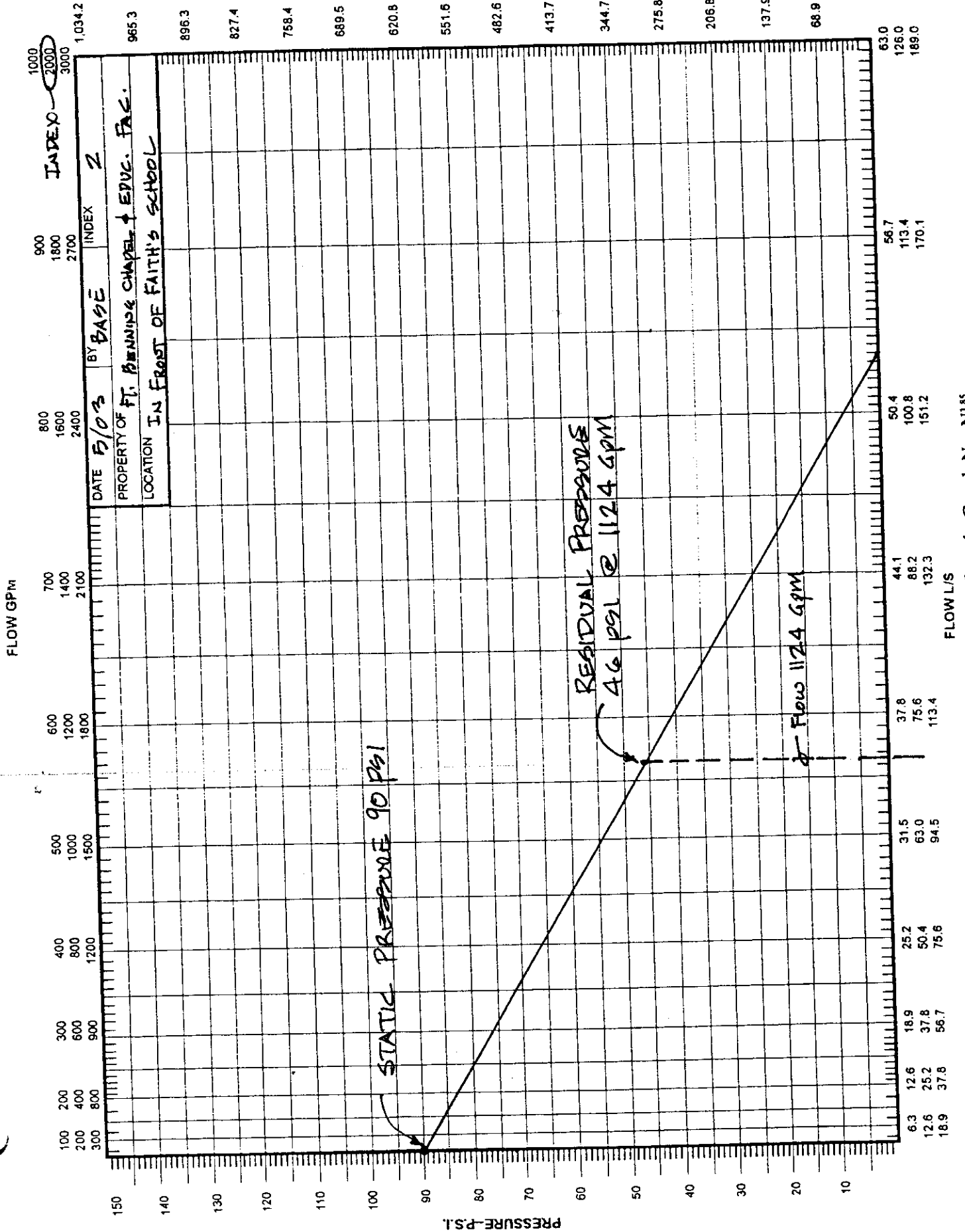


Figure 7-4: Water Supply Graph No. N185

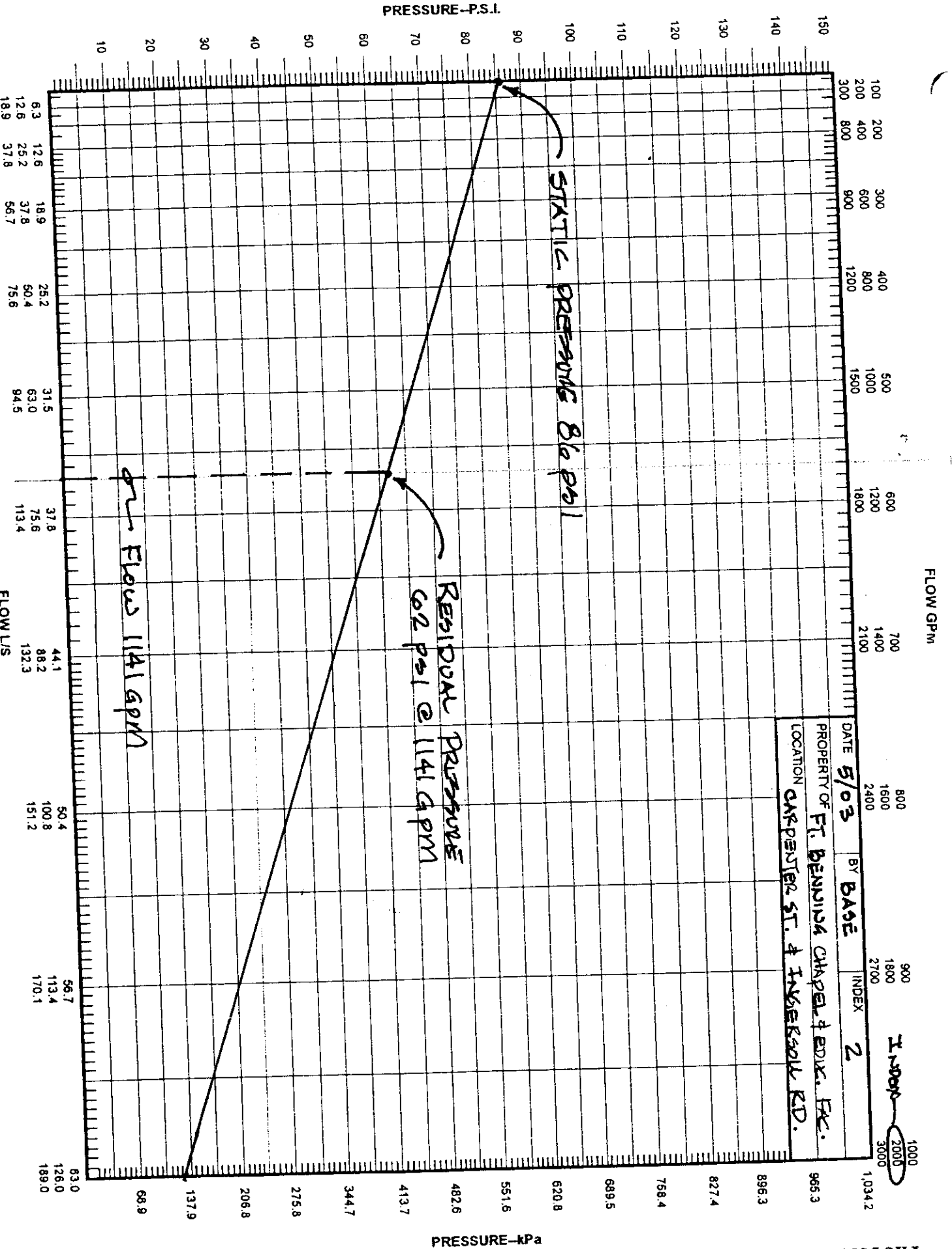


Figure 7-4: Water Supply Graph No. N145

APPENDIX J
GEOTECHNICAL
INFORMATION

SUBSURFACE EXPLORATION
AND
GEOTECHNICAL ENGINEERING REPORT
(PRELIMINARY)

Chapel and Education Facility
L.I. 019315, FY-04
Fort Benning, Georgia

By
Soils Section
Geotechnical & HTRW Branch
U.S. Army Engineer District, Savannah

May 5, 2003

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APPENDIX

One-Point and Two-Point Compaction Methods

SUBSURFACE EXPLORATION AND
GEOTECHNICAL ENGINEERING REPORT
(PRELIMINARY)

Chapel and Education Facility
L.I. 019315, FY-04
Fort Benning, Georgia

May 5, 2003

1. PURPOSE. The Government has conducted a preliminary geotechnical investigation for the proposed project. This report provides an overview of the site conditions, including subsurface soil and groundwater conditions, and preliminary recommendations pertaining to the geotechnical design and construction of the project.

2. QUALIFICATION OF REPORT. The field explorations performed for this report were made to determine the general subsurface soil and groundwater conditions and were not intended to serve as an assessment of site environmental conditions. No effort was made to define, delineate, or designate any areas of environmental concern or of contamination. Any recommendations regarding drainage and earthwork construction are made on the basis that such work can be performed in accordance with applicable laws pertaining to environmental contamination.

3. PROJECT DESCRIPTION. The proposed project consists of the design, site preparation and construction of a chapel, an education center addition and supporting utilities and parking lots.

a. The new chapel will be located just east of the intersection of Carpenter Street and Ingersoll Street on generally level, grassed terrain. The new chapel will be a self-contained 25,000 square foot complex. The site was previously occupied by wooden WWII buildings that have since been removed. Parking space for 240 vehicles will be provided for this chapel. The proposed parking will be roughly divided in half with one parking area to the north and one parking area to the south of the proposed chapel. To match surrounding architecture, the chapel's exterior walls will be white synthetic stucco on concrete masonry units (CMU) and the roof will be clay tile.

b. The education center addition will extend from the southern end of the existing annex of the chapel located in the Field of Four Chaplains near the intersection of Brockman Street and Lauber Street. The addition will be roughly 8500 square feet. This site is also generally flat and grassed. Parking space for 25 vehicles will be provided as part of this addition. Since the education center addition will be an extension of the existing annex, it will be constructed of CMU and synthetic stucco to match the exterior of the annex. The roof will be gray asphalt shingles to match the existing annex roof.

Since the project will be constructed under a design/build contract, detailed structural information for the proposed facilities is unavailable.

4. EXPLORATION PROCEDURES.

a. Site Reconnaissance. Prior to the field exploration, the two sites and surrounding areas were researched with existing topographic maps and previous projects in the area were reviewed to obtain a general site characterization. A civil engineering technician conducted an inspection site visit. The observations were used in planning the exploration, in determining areas of special interest, and in relating site conditions to known geologic conditions in the area.

b. Field Exploration.

(1) Subsurface conditions at the project sites were explored by 16 soil test borings (designated B-1 through B-18, excluding B-3 and B-12) drilled at the approximate locations shown on the drawings included with this RFP. Depths of the borings ranged from five to twenty five feet below the existing ground surface.

(2) Boring locations were established in the field by an engineering technician by measuring distances and estimating right angles from existing buildings, roads, sidewalks, and other features. Since the measurements were not precise, the locations shown on the drawings should be considered approximate.

(3) Geotechnical & Environmental Consultants Inc., Macon, Georgia, drilled the test borings under contract to the Savannah District. The borings were drilled with a truck-mounted CME 55 drill rig; a 2.25-inch hollow-stem auger was used to advance the boreholes. Split-barrel sampling with Standard Penetration Testing (SPT) was performed at intervals shown on the boring logs. All soil sampling and Standard Penetration Testing were in substantial accordance with ASTM D 1586. In the Standard Penetration Test, a soil sample is obtained with a standard 1½ inch I.D. by 2 inch O.D. split-barrel sampler. The sampler is first seated 6 inches and then driven an additional 12 inches with blows from a 140-pound hammer falling a distance of 30 inches. The number of blows required to drive the sampler the final 12 inches is recorded and is termed the “standard penetration resistance”, or the “N-value”. Penetration resistance, when properly evaluated, is an index of the soil’s strength, density, and foundation support capability. Groundwater levels were measured in the boreholes at the completion of drilling.

(4) Representative portions of the soil samples taken in the field were sealed in airtight containers and transported to the driller’s laboratory where an engineer examined them to confirm the driller’s field classification. Classification of the soil samples was performed in general accordance with ASTM D 2488 (Visual-Manual Procedure for Description of Soils). The soil classifications include the use of the Unified Soil Classification System described in ASTM D 2487 (Classification of Soils for Engineering Purposes). Since the soil descriptions and classifications are based on visual examination, they should be considered approximate.

(5) Soil boring logs graphically depicting soil descriptions, standard penetration resistances, and observed groundwater levels are shown on the drawings with this RFP.

5. SITE AND SUBSURFACE CONDITIONS.

a. Site Description.

(1) Chapel. The site of the proposed chapel is generally level and grassed with several mature pine and deciduous trees. The site occupies an area east of Ingersoll Street, near its intersection with Burr and Carpender Streets. An old school that is now used for administration is located to the north and east of the proposed chapel. The area west of Ingersoll Street is largely residential. The two proposed parking lots will be located about 80 feet north and south of the proposed chapel. Each lot abuts the east side of Ingersoll Street. The larger of the two parking lots extends about 450 feet to the south along Ingersoll Street and will be from 200 to 220 feet wide. The smaller parking lot to the north extends for about 350 feet along Ingersoll Street and will be about 200 feet wide. The project requires the demolition and removal of several existing sidewalks, trees and the relocation of power poles. The terrain slopes down from the east to the west toward Ingersoll Street. The elevation of the site on the east side is about 333 to 334 feet (mean sea level). Ingersoll Street is at about 332 to 333 feet in the vicinity of the proposed chapel.

(2) Education Center Addition. The education center addition near Lauber Street and Brockman Street will occupy a generally flat, grassy area. The site slopes from an elevation of 339 toward the north at a slope of about one-half percent. Demolition of sidewalks, removal of small trees and relocation of power poles will be required.

b. Area and Site Geology. Fort Benning is located in the Coastal Plain physiographic province immediately south of the Fall Line, the demarcation separating the Coastal Plain from the Piedmont province. The Fall Line runs roughly east to west along the northern boundary of the base. The base is located in the Fall Line Zone where Cretaceous age sedimentary formations of the Coastal Plain overlap the deeply weathered metamorphic and igneous rocks of the Piedmont. In the Fort Benning area, the Cretaceous system includes, from oldest to youngest, the Tuscaloosa Formation, Eutaw Formation, Blufftown Formation, Cusseta Sand, and the Ripley Formation. The formations consist of poorly consolidated marine deposits of coarse to fine sands, gravel, micaceous clays, and shales. Soils derived from the Coastal Plain formations occupy about 85 percent of the land surface of Fort Benning.

c. Subsurface Conditions

(1) Chapel. Borings B-1, -2, -4 and -5 were drilled to a depth of 25 feet near the corners of the proposed chapel. Borings B-6 through B-14, excluding B-12, were drilled for the proposed parking lots to a depth of five feet. The soil at the proposed chapel and the parking lots is rather homogeneous both laterally and vertically. In all of the borings, except B-13, between five and six inches of topsoil was encountered at the surface, which in turn is underlain by red, medium to fine silty sand. The blow counts, or "N-values", ranged from five near the surface to eighteen at the termination depths of the borings. The blow counts averaged about 7 (loose density) in the top ten feet and increased with depth. The blow counts in the lower fifteen feet of each boring averaged about 14 (medium density). Boring B-13 contained a 2.5-foot layer of clayey sand (N=6) below the topsoil, which in turn is underlain by two feet of red, medium to fine silty sand (N=7).

(2) Education Center Addition. Borings B-15 through B-18 were drilled to a depth of 25 feet near the corners of the proposed addition. The subsurface soil conditions at this site are similar to those at the chapel, with the soil profile being quite homogeneous both laterally and vertically. All of the borings encountered about three inches of topsoil, underlain by red or brown, medium to fine silty sand, with the exception of boring B-16, which contained a three-foot layer of clayey sand (N=6). The blow counts ranged from 6 near the surface to 23 at depth. The blow counts averaged 6 (loose density) in the top 10 feet and 15 (medium density) in the lower 15 feet of the soil profile.

(3) The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs shown on the drawings should be reviewed for specific information at individual boring locations. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between the subsurface materials; the actual transition may be gradual.

d. Groundwater Conditions.

(1) No water was encountered in any of the borings during or at completion of drilling. The borings were backfilled immediately, thus long term stabilized water levels were not obtained.

(2) Groundwater depths or elevations shown on the boring logs represent groundwater conditions encountered on the dates shown. Absence of groundwater data for certain borings implies that no data is available, but does not necessarily mean that groundwater will not be encountered at the locations of those borings. Groundwater levels will fluctuate with seasonal and climatic variations, variations in subsurface soil conditions, and construction operations. Therefore, groundwater conditions in the future, and at other locations on the site, may differ from the conditions encountered at the boring locations, on the dates the borings were performed.

6. ENGINEERING EVALUATIONS AND RECOMMENDATIONS.

a. General. The following conclusions and recommendations are based on the information available on the proposed structures, observations made at the project sites, interpretation of the data obtained from the soil test borings, and our experience with soils and subsurface conditions similar to those encountered at the project sites. Since the test borings represent a very small statistical sampling of the subsurface conditions, it is possible that subsurface conditions substantially different from those indicated by the test borings could be encountered during the construction. In such instances, adjustments to the design and construction of the proposed structures might be necessary, depending on the actual conditions.

b. General Site Preparation. The removal of trees, utilities, and sidewalks, etc., will be required to prepare the site for construction. Following demolition and removal, the construction area should be grubbed and stripped of all vegetation, topsoil, organics, remnants of foundations and other deleterious materials. Clean topsoil can be stockpiled and reused later in landscaped areas. It is recommended that the zone of stripping extend a minimum of ten feet beyond the outer edges of the structures and pavement. Any existing utilities in construction areas should be located and rerouted, as necessary.

c. Foundation Design and Construction.

(1) Given the proposed sites and the proposed types of structures, it is our opinion that shallow spread foundations can be used for support of the proposed buildings.

(2) Footings should be supported on approved natural or existing fill soils or on properly compacted structural fill. Column footings and load-bearing wall footings should have minimum dimensions of 30 inches and 24 inches, respectively, and should be located at a minimum depth of two feet below finish floor or finish grade, as appropriate. Non load-bearing wall footings should have a minimum width of 18 inches and should be located at a depth of 18 inches below finish floor or finish grade, as appropriate.

(3) Foundation excavations should be concreted as soon as practical following excavation. Exposure to the environment could weaken the soils at the footing bearing level should the foundation excavations remain open for an extended period of time. Bottoms of foundation excavations should be inspected immediately prior to placement of reinforcing steel and concrete to verify that adequate bearing soils are present and that all debris, mud, and loose, frozen or water softened soils are removed. If the bearing surface soils have been softened by surface water intrusion or by exposure, the softened soils must be removed to firm bearing, and replaced with additional concrete during the concreting, or replaced to design subgrade with No. 57 or No. 67 stone, compacted to a non-yielding condition. To minimize exposure, the final excavation (4 to 6 inches) to design subgrade could be delayed until just prior to placement of reinforcing steel and concreting. Foundation excavations must be maintained in a drained/dewatered condition throughout the foundation construction process.

d. Seismic Design. Seismic loads should be computed in accordance with IBC 2000, except as modified by UFC 1-200-01. The project site is classified as Site Class D for the purpose of determining maximum considered earthquake spectral response accelerations.

e. Concrete Slabs-On-Grade.

(1) Based upon our past experience and the subsurface conditions encountered at the site, concrete floor slabs can be supported on densified in situ soils or on fill soils placed and compacted in accordance with the recommendations presented in this report regarding structural fill. We recommend that all concrete slabs-on-grade in inhabitable areas, including storage areas, be underlain by a minimum of four inches of open graded, washed pea gravel, or stone, often termed “capillary water barrier,” to prevent the capillary rise of groundwater. Nos. 57, 67, 78, or 89 stone could be used. We also recommend that a moisture vapor barrier consisting of lapped polyethylene sheeting having a minimum thickness of 6 mil be provided beneath the building floor slabs to reduce the potential for slab dampness from soil moisture. Concrete slabs should be jointed around columns and along supported walls to minimize cracking due to possible differential movement.

(2) Construction activities and exposure to the environment often cause deterioration of the prepared slab-on-grade subgrade. Therefore, we recommend that the slab subgrade soil be inspected and evaluated immediately prior to floor slab construction. The evaluation might include a combination of visual observations, hand rod probing and field density tests to verify that the subgrade has been properly prepared. If unstable soil is revealed, the affected soil should be removed to firm bearing, and replaced to

design subgrade with suitable structural fill soil placed and compacted as recommended, or replaced with additional capillary water barrier material.

f. Groundwater Considerations. Water should not be allowed to collect near the foundation or on floor slab areas of the building either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site drainage should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slabs.

g. Structural Fill. In order to achieve high density structural fill, the following evaluations and recommendations are offered:

(1) Based on the soil test borings, excavated on-site soils (excluding any organics and debris) can be used as structural fill. Some moisture content adjustment will probably be necessary to achieve proper compaction. If water must be added, it should be uniformly applied and thoroughly mixed into the soil by discing.

(2) We recommend that the contractor have appropriate disc harrows on site during earthwork for both drying and wetting the soils.

(3) Materials selected for use as structural fill should be free from roots and other organic matter, trash, debris, and frozen soil, and stones larger than 3 inches in any dimension. The following soils represented by their Unified Soil Classification System (ASTM D 2487) group symbols will be suitable for use as structural fill: GC, GM, SP, SW, SC, SM, ML, and CL. The following soil types are considered unsuitable: Pt, OH, OL, GP, GW, MH and CH.

(4) Suitable fill soils should be placed in lifts of maximum 8 inches loose measurement. The soil should be compacted by mechanical means such as steel drum, sheepsfoot, tamping, or rubber-tired rollers. Compaction of clays is best accomplished with a sheepsfoot or tamping roller. Periodically rolling with heavily loaded, rubber-tired equipment may be desirable to seal the surface of the compacted fill, thus reducing the potential for absorption of surface water from rain. This sealing operation is particularly important at the end of the workday and at the end of the week. Within confined areas or foundation excavations, we recommend the use of manually operated, internal combustion activated compactors ("wacker packers" or sled tamps). The compactors should have sufficient weight and striking power to produce the same degree of compaction that is obtained on the other portions of the fill by the rolling equipment as specified. Where hand operated equipment is used, the soils should be placed in lifts of maximum 4 inches loose measurement.

(5) We recommend the structural fill and subgrades be compacted to the following minimum percents of the modified Proctor maximum dry density (ASTM D 1557):

Beneath structures and building slabs, to 5 feet beyond building and structure line, around footings and in trenches	90 percent
---	------------

Beneath paved areas, except top 12 inches	90 percent
Beneath paved areas, top 12 inches	95 percent
Beneath sidewalks and grassed areas	85 percent

h. Construction Quality Control Testing.

(1) Prior to initiating any structural fill placement and/or compaction operations, we recommend that representative samples of the soils which will be used as structural fill or subgrade, both suitable on-site soils and off-site soils (borrow), be obtained and tested to determine their classification and compaction characteristics. The samples should be carefully selected to represent the full range of soil types to be used. The moisture content, maximum dry density, optimum moisture content, grain-size and plasticity characteristics should be determined. These tests are required to determine if the fill and subgrade soils are acceptable and for compaction quality control of the subgrades and structural fill. Tests for the above soil properties should be in accordance with the following:

Moisture Content	ASTM D 2216
Maximum Dry Density and Optimum Moisture	ASTM D 1557
Grain-Size (Wash No. 200, less hydrometer)	ASTM D 422 and D 1140
Plasticity	ASTM D 4318

(2) A representative number of in-place field density tests should be performed in the subgrade of compacted on-site soils and in the structural fill and backfill to confirm that the required degree of compaction has been obtained. In-place density tests should be performed in accordance with the sand cone method prescribed in ASTM D 1556; the use of nuclear gauges for density testing should not be permitted. We recommend that at least one density test be performed for each 4000 square feet, or portion thereof, in **each** lift of compacted structural fill beneath structures; one for each 10,000 square feet beneath paved areas. At least one density test should be performed for each 100 linear feet in the bearing level soils of continuous footings. Density tests should be performed at 100-foot intervals in the subgrade of roads. In addition, a density test should be performed for each 150 linear feet of backfill placed per foot of depth in trenches for utilities systems. Where other areas are compacted separately by manually operated compactors, a minimum of one density test should be performed for every 250 square feet, or portion thereof, of fill placed per foot of depth.

(3) Compaction control of soils requires the comparison of fill water content and dry density values obtained in the field density tests with optimum water content and maximum dry density. The performance of a laboratory compaction test on material from each field density test would provide the most accurate relation of the in-place material to optimum water content and maximum density, but it is not feasible to do this as the testing could not keep pace with fill construction. We recommend that compaction control of the earthwork construction be performed using a “family” of compaction curves and the one-point or two-point compaction methods. Excerpts from construction specifications, which describe the approach and its use, are included the Appendix.

(4) Any area that does not meet the required compaction criteria should be reworked, and retested. If the moisture content of the soil is within the recommended range, additional compaction

may be all that is necessary to increase the density. If the moisture content is not within the recommended range, then, the moisture content should be adjusted to within the range, and the area recompactd.

(5) All laboratory and field density testing should be performed by an approved commercial testing laboratory qualified in this type of work.

APPENDIX

One-Point and Two-Point Compaction Methods

Compaction Control

For fine grained (clayey and silty) soils and for sands with appreciable fines such that normal shaped compaction curves are obtained, results of all compaction tests shall be plotted on a common plot as a family of curves. For each field density test performed, a one-point compaction test, with additional points as needed, shall be performed on the same material on which the field density test was conducted. The one-point compaction test shall be performed on the dry side of the optimum moisture content. For comparison of field density data to the proper laboratory compaction test results, the procedures for the one-point and/or two-point compaction control methods as described in paragraph Compaction Procedure, shall be used. Compaction curves plotted on the family of curves shall be of such a scale that the optimum moisture content can be interpreted to the nearest 0.1 percent and the maximum dry density can be interpreted to the nearest 0.1 pcf (or 2 kg/m^3). When a one-point test plots outside the range of the family of curves, an additional five-point compaction test shall be performed.

Compaction Procedure

General

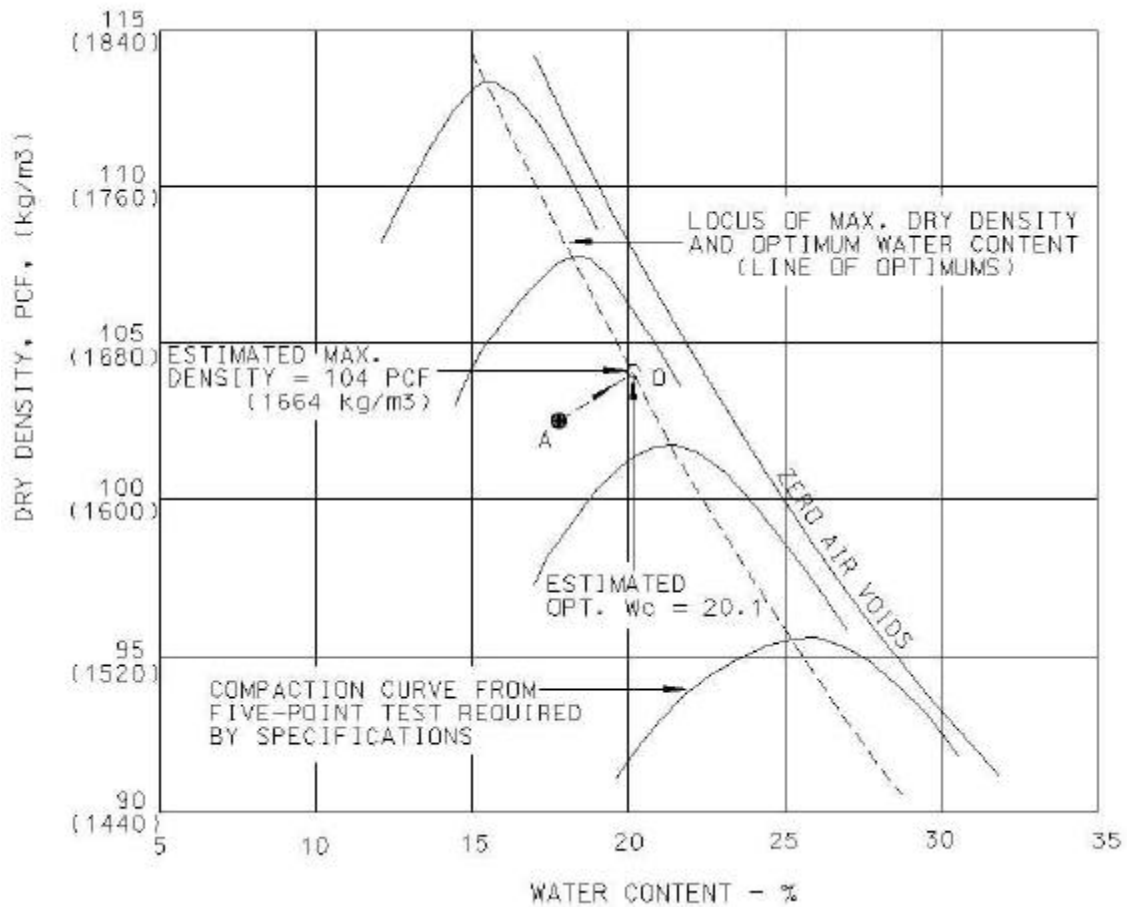
The following paragraphs describe methods of relating field density data to desired or specified values. Compaction control of soils requires comparison of fill water content and/or dry density values obtained in field density tests with optimum water content and/or maximum dry density. At a minimum, control shall be in accordance with the One-Point Compaction Method. Where conditions require, the Two-Point Compaction Method shall be used.

One-Point Compaction Method

The material from the field density test is allowed to dry to a water content on the dry side of estimated optimum, and then compacted using the same equipment and procedures used in the five-point compaction test. Thorough mixing is required to obtain uniform drying; otherwise, results obtained may be erroneous. The water content and dry density of the compacted sample are determined and then used to estimate its optimum water content and maximum dry density as illustrated in Figure 1 at the end of this section. In Figure 1, the line of optimums is well defined and the compaction curves are approximately parallel to each other, consequently, the one-point compaction method could be used with a relatively high degree of confidence. However, in Figure 2 at the end of this section, the curves are not parallel to each other and in several instances will cross if extended on the dry side. Consequently, the correct curve cannot be determined from the one-point method; therefore, the two-point compaction method should be used. The one-point method should be used only when the data define a relatively good line of optimums.

Two-Point Compaction Method

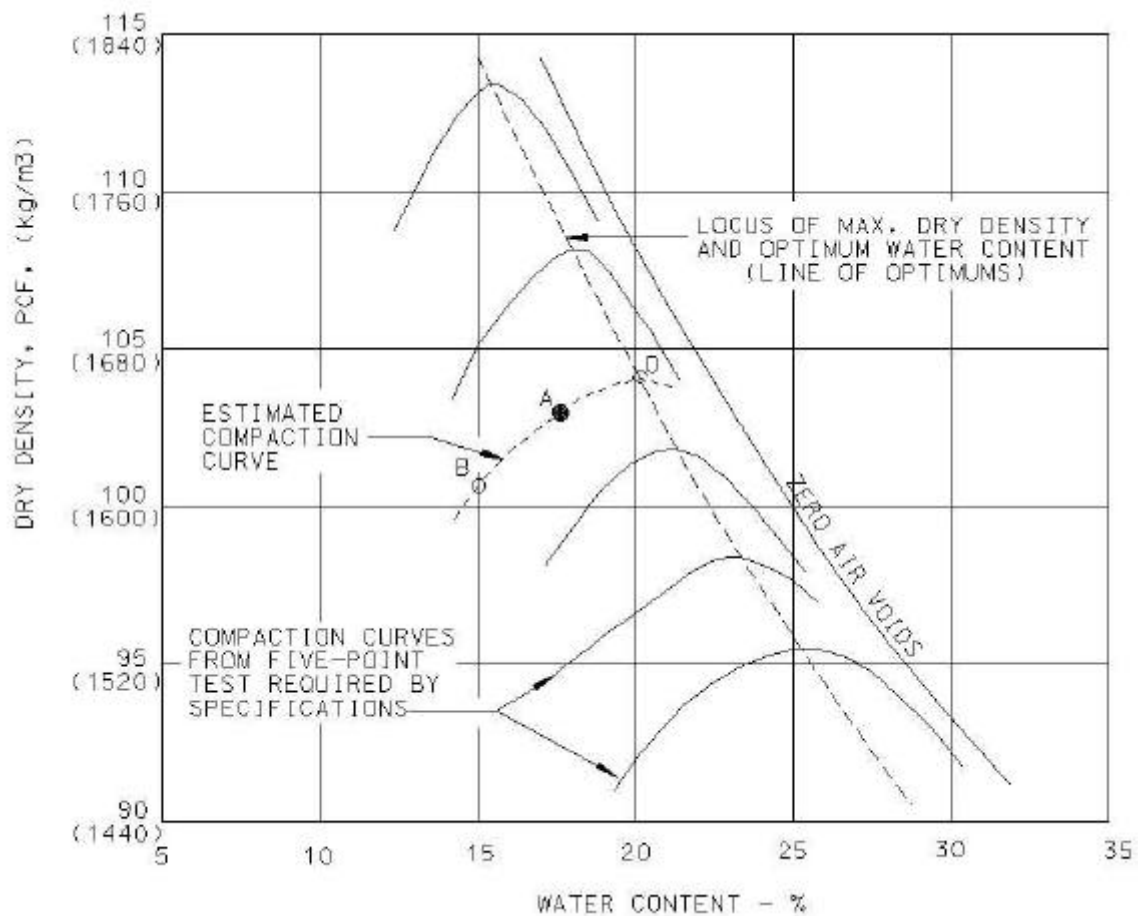
In the two-point test, one sample of material from the location of the field density test is compacted at the fill water content if thought to be at or on the dry side of optimum water content (otherwise, reduced by drying to this condition) using the same equipment and procedures used in the five-point compaction test. A second sample of material is allowed to dry back about 2 to 3 percentage points dry of the water content of the first sample and then compacted in the same manner. At least one point shall fall within 3 percent of the line of optimums. After compaction, the water contents and dry densities for the two samples are determined. The results are used to identify the appropriate compaction curve for the material being tested as shown in Figure 2 at the end of this section. The data shown in Figure 2 warrant the use of the two-point compaction test because the five-point compaction curves are not parallel. Using point A only, as in the one-point test method, would result in appreciable error as the shape of the curve would not be defined. The estimated compaction curve can be more accurately defined by two compaction points.



PROCEDURE:

1. Point A is the result of a one-point compaction test on material from field density test. This point must be on the dry side of optimum water content.
2. Point O is the estimated optimum water content and maximum density of the fill material based on a projection of point A approximately parallel to the adjacent compaction curves.
3. Point A must plot within 3 percent of the line of optimums.

Figure 1. Illustration of one-point compaction method.



PROCEDURE:

1. Points A and B are results of a two-point compaction test on material from field density test. Points A and B must be on the dry side of optimum water content.
2. The estimated compaction curve based on Points A and B establishes Point O on the locus, which is the estimated maximum dry density and optimum water content of the fill material.
3. One point must plot within 3 percent of the line of optimums.

Figure 2. Illustration of two-point compaction method.

APPENDIX K
ARMY CHAPEL STANDARD
DEFINITIVE DESIGN

ARMY CHAPEL STANDARD DEFINITIVE DESIGN

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APPENDICES

A	ROOM AND AREA SUMMARY LISTS
B	INTERIOR DESIGN ITEM LISTS

ARMY CHAPEL STANDARD DEFINITIVE DESIGN

1 INTRODUCTION

1.1 DEFINITIVE DESIGN

This Standard Design package supercedes versions for this facility type previous to May 2002. This Army Chapel Standard Definitive Design can be used as a Troop Chapel (for a Training Center or T. O. E. Unit), Post Chapel or Family Chapel. The facility will serve all faiths and the military community without favoring any one distinctive group in orientation or design. The facility is intended for use anywhere in the continental United States or overseas locations. Many features have been incorporated into the design of this facility to give it the maximum ability to adapt to the different needs of all distinctive faith groups and the general military community. This definitive design has been prepared to meet criteria established by the Office of the Chief of Chaplains, and the corresponding Architectural and Engineering design criteria established by the Headquarters U. S. Army Corps of Engineers for each project. The core functional criteria used in developing this facility type is as follows:

1. Support worship services of all distinctive faith groups including the accommodation of various types of services, to include sacramental, dedications, marriage, memorial and funeral services. Support religious education and instruction, chapel fellowship activities, chapel outreach programs, soldier ministry programs, family life ministry and religious pastoral care of many kinds.
2. Support administrative activities necessary to operate and maintain the chapel in a manner that ensures maximum support for the military community and is beneficial to the Installation.

1.2 SEATING CAPACITY AND SIZES

This chapel has fixed seating with capacity for “regular” weekly congregations and the capability to expand the Worship Center seating area with additional chairs placed in adjacent spaces that can be opened up to the Worship Center for “special occasion” events.

The size identified as “Chapel Center (400)” is 22,600 square feet in area with a “regular” weekly seating capacity of 400 persons and a “special occasion” capacity of 639 persons by utilizing chairs in the adjoining (the two spaces are separated by movable partitions) activity room.

1.3 ROOM TYPES AND REQUIREMENTS

a.

b. The chapel facility includes some individual offices for chaplains, group offices (Assistant’s Area) and other administrative spaces required for the Unit Ministry Teams. The major space of the chapel facilities is a primary “worship center” or auditorium type space with a podium type raised platform in addition to the seating area and baptistery suite. Other spaces include a large group activity room with a stage type raised platform and seating area, kitchen/pantry room, primary entry lobby (reception) area, sacristy/robing room, resource room, an exterior covered area at the entries, general use classrooms/multi-purpose rooms in multiple sizes and some special use/classroom suites. These specialized classroom suites accommodate a number of special activities as well as being available for general classroom use. Special activities might include blessed sacrament/reconciliation functions, choir rehearsal functions, and nursery functions. The suite concept allows each function to expand into adjacent classroom space when necessary, while also allowing maximum religious education classroom space. The goal is to allow each congregation or community group the optimum usable features for their activities in an environment where all share the benefits of a relatively flexible and extremely functional facility.

c. In addition to these specific spaces the chapel will include appropriate circulation spaces, toilet facilities, storage spaces and equipment spaces for mechanical, electrical, communication and electronic equipment to support the total building and all of its functions. Carefully compare all of the criteria

sections (such as Architectural, Interiors, Electrical) when planning a specific design project.

1.4 STANDARD DESIGN DRAWINGS AND INFORMATION

Copies of the drawing and text information that constitutes a Standard Design are available from the U. S. Army Engineering and Support Center, ATTN: CEHND-ED-ES-I, P.O. Box 1600, Huntsville, AL 35807-4301, Telephone: Commercial (205) 895-1402, AUTOVON/DSN 645-5560.

1.5 MANDATORY ITEMS

Mandatory Items to be included in each Chapel facility are as follows:

1. The basic spaces and their arrangement as shown on the plan portion of this design package including locations for fixed and movable partitions. These have been tailored to accommodate the optimum range of activities.
2. The covered entry "porch" structure. This is considered to be a key functional element because of the range of activities and functions to be accommodated.
3. A combination of a steeple mounted directly on the building and a separate storage building (14 SM minimum size) that exhibits the same materials and substantial looking construction as the chapel facility. The or steeple is considered to be a key identifying element of the facility and indicator of its placement in the community.
4. Appropriate vehicle and pedestrian elements including bicycle parking and landscaping features.
5. Using the most up-to-date code and government criteria and general industry criteria in effect at the time of the design process.

2 FUNCTIONAL/OPERATIONAL REQUIREMENTS

2.1 WORSHIP CENTER/AUDITORIUM AND LARGE ACTIVITY ROOM

A key concept for the worship center/auditorium and large group activity room (the Chapel Complex includes a third space type between these two to allow for additional flexibility of use) is that they have been designed to open into one another, allowing for flexibility in seating capacity. This concept has also been used with the spaces making up the special use/classroom suites previously described. This has been accomplished by the use of operable partitions. These operable partitions need to feature a sound transmission rating of **52** or better and be designed for high frequencies of opening and closing cycles. High quality accordion pleat type operable partitions are required with particular attention to their finish and operating characteristics.

2.2 ACCESSIBILITY REQUIREMENTS

Multiple sizes and types of spaces allow the facility to better support a diverse religious and general military community. The "U" shaped circulation system and secondary lobbies allow for a smoother flow of incoming and outgoing users as well as multiple groups of users at the same time or one group entering as a second is arriving. This shape also creates some basic acoustic separation between different space types. Movable partitions have been included to allow for the rapid rise and fall in the number of users in certain space types. The design allows small children and special-needs users to be accommodated as well as adults and older children. This facility design allows the physically handicapped access to nearly all spaces outside of equipment rooms and closets. The only non-equipment spaces not freely accessible to an unattended handicapped individual include the higher raised platform in the Activity Center and the Baptistery Suite. Both of these spaces present special safety hazards to an unattended handicapped individual. These spaces are, however, still usable by the physically handicapped if assisted by others. A range of additional facility features has been included to accommodate a full range of religious and community ceremonies including sacramental, marriage and memorial functions. The provision of a small kitchen for the handling of pre-prepared foods allows for such items to be a comfortable and welcome addition to many of the regular and special functions that will take place in the facility.

2.3 COORDINATION, PLANNING AND MANAGEMENT SPACES

All of the individual and group activities require support from the Unit Ministry Teams (groups of Chaplain staff as defined for each installation). In turn, these teams require support in the form of professional administrative, activity and personal counseling spaces. Team members will be seeking to support the military community members and their Installation in three basic ways. First, by coordinating the use of all the different spaces by all the different users. Good coordination will ensure the most efficient and effective use of the facility and the greatest number of satisfied users. Second, by planning and producing a number of individual and group functions. These could range from counseling or instructing an individual to leading a large group religious activity. Third, by managing the maintenance and operation of the facility and its supporting equipment systems in a way that provides a safe, economical and nurturing environment within the facility and extends the life of the facility to the greatest extent practicable. This will allow the facility to fulfill its mission for many years to come in a very cost effective manner. So, spaces for these staff people to coordinate, plan and manage has been included in this facility

2.4 STEEPLE

For this particular facility type, the inclusion of a constructed identifying symbol is extremely important. Hence the requirement for a relatively tall steeple that includes an operating carillon system. This steeple will provide the visual and auditory signal to the community that communicates its unique identity and enhances its ability to accomplish its mission. A separate storage building is required for the site maintenance supplies.

2.5 BUILDING CONSTRUCTION CODES AND STANDARDS

The project shall be designed to meet the latest appropriate building construction codes and standards. These codes and standards regularly change. The requirements of such criteria as established at the time of a specific project's inception must be fulfilled when developing this definitive design into a completed facility.

3 SITE DESIGN

3.1 FUNCTIONAL/OPERATIONAL REQUIREMENTS

A bicycle parking area shall be located near an entry to the building.

Adequate site lighting for pedestrians and cars should also be included in the design. Additional lighting for the facility to accent certain features of the building, landscaping or views should also be considered.

Normal access to the building is intended to be through the main entrance, with a second entrance on the opposite side of the building for a separate group of users. Parking should be considered for overlapping groups of users who may be in separate areas of the facility.

The service drive located at the rear of the facility allows for maintaining the building's support systems and for controlled vehicular access to the classroom area and kitchen facilities through the rear main entrance. This drive doubles as a walkway up to the face of the building from the parking area.

Supporting landscaping should be designed to be low maintenance, and indigenous with the environment in which the facility is located. Consideration should be given to the building as there are offices and classrooms located around the perimeter of the structure. Specific views of the buildings should be appropriately landscaped i.e., to enhance the main entrances to screen mechanical electrical equipment and large parking areas. Mounding and landscaping can be used to deflect or reduce noise from certain areas. Plantings should be held away from the building in accordance with Force Protection criteria. Thick shrubbery and dense plantings should be avoided.

The design incorporated typical features for threat protection. The level of threat is to be defined by the installation / MACOM and is included in the project design criteria. This criteria is to be referred to for specific definitions and the security measures required to resist a prescribed threat.

4 ARCHITECTURAL DESIGN

4.1 GENERAL ARCHITECTURAL CONSIDERATIONS

This facility type is intended to be a key asset for the total Installation and the military community. . Providing protection from the wind and wind driven precipitation for doors and entries needs to be considered. The development of interior design themes should relate to the exterior design decisions made and it should receive a thoughtfully coordinated treatment throughout all interior spaces. These interior themes should also be appropriate to the functions housed. Consult the Installation regarding their preferences about items such as bulletin boards or directories, construction materials, appearance characteristics and special features. Safety and security for all users will require incorporating features such as thoughtfully placed locking hardware, handrails and non-slip floor finishes. Door hardware should take into consideration the high volume of building users through the week. Doors should be of solid core hardwood but a special STC rated design is not generally necessary. It may be appropriate to provide some doors with protection plates or special hold-open devices. Door leaves should almost always (obvious exceptions being some of the Baptistery Suite doors) be a minimum of 3'-0" wide. A small vision light should be provided in almost every interior door (obvious exceptions being toilet rooms, changing rooms, and some equipment rooms). The primary staff entrance point should include some form of special access hardware such as a keypad entry type lockset to minimize the distribution of control keys. Protection against terrorism must be provided and as these requirements are subject to rapid change, the most current criteria documents must be requested at the time of design. All spaces should be evaluated for their part in the use of the latest media technology. See the section in the Electrical Requirements that identifies media applications.

4.2 ADMINISTRATIVE SPACE FOR THE UNIT MINISTRY TEAM

4.2.1 General Unit Ministry Team Requirements

For this facility to reach its full potential for the Installation and the military community it serves it must include well designed administrative space such as offices for staff to coordinate activities and to manage the support needs of the facility and its user groups. These spaces will also provide for the security of the building and its users by functioning as the primary reception point for visiting individuals or groups seeking services of any kind. This same space will be valuable for the Unit Ministry Team to plan the religious and religious education functions that meet the needs of their various religious communities, to consult with one another about such things and to provide an appropriate setting for professional counseling of many kinds.

4.2.2 Functional Details

The appropriate "Functional Details" for this area are as follows: The spaces will need to include typical features and the level of finish found in professional office type space. Since counseling may also happen in the individual offices, enhanced acoustic isolation (an STC of 52 or better) of those spaces is very important. This area will generally be responsible for the receiving and control of individual visitors and should include glass partitioning or interior window features to keep a view of the main entry doors and vestibule during the hours when those doors are unlocked and open to the public. The group office and individual office spaces shall receive locksets. Floors shall be carpeted, walls shall be a mix of painted wall board and fabric wall covering protected with chair rails from moving furniture or carts. Wall base could be resilient or wood. Ceilings shall be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling heights for these spaces shall be 9'-0".

4.3 WORSHIP CENTER/AUDITORIUM

4.3.1 General Worship Center/Auditorium Requirements

The worship center/auditorium is designed around a symmetrical axis so the focus of the gathered community benefits from an optimum line of sight and natural acoustic characteristics. This arrangement does not accommodate every variation of group gathering possible, but it accommodates the vast majority of actual activity needs in the most maintainable and economic fashion. In particular, the seating arrangement allows for some visual interaction between the seated participants as well as a clear ability to view presentations of all types, including worship leading, discussion leading, speaking, baptisms, weddings, memorials, group performances and educational presentations. It also allows for symbolic processions from the “back” of the space to the “front”. The movable partitions across the back allow larger groups to be seated by extending the seating area into the adjacent rooms. Windows shall be provided on the side walls, but all such features must include a simple system for blocking out light so that presentations requiring low light levels may be made. The raised platform accommodates teachers, individual speakers or activity leaders, instruments, instrumental groups, wedding or memorial groups, group presentations such as skits or music performances and easily viewed baptisms. When not in use, the baptistery can be closed off by means of an ornamental curtain (dossal) or other suitable decorative device. The baptistery itself should be a fully manufactured item of the highest quality and optimum viewing character. Its size must accommodate two or three persons at one time, one of whom at least is in a fully prone position.

4.3.2 Seating

Seating in the worship center/auditorium must be of high quality fixed pews with fabric covered padded seats and backs to reduce operation effort and provide the optimum in seating comfort and capacity. These pews should include typical options for miscellaneous racks and attached kneelers that can be rotated up and out of the way. Pew spacing (**39” minimum**) must allow for easy passage of walking persons in front of seated persons. Reducing aisle space to increase seating capacity is not acceptable. Code requirements for maximum length, aisle spacing, etc. must be incorporated in any design.

4.3.3 Functional Details

The appropriate “Functional Details” for this area are as follows: The space will need to include features that allow for the control of light, sound and temperature with a maximum of ease and flexibility. It will also be important to include visual cues, finishes and color schemes that tie this space to the adjacent rooms for those activities when the operable partitions are open and the individual rooms function as one large space. Different Religious Communities often have different symbolic items that they use for some of their activities. While these are generally portable and displayed or stored in other portable furnishings, the over-all space should support their use. The same is true for musical instruments or teaching aids. As a space, the area should not include any fixed religious decoration or symbol so that it is also appropriate for general military community use. The screen wall or curtain between the baptistery and the worship center needs to follow the same guidelines and this is also true of special features like stained glass or carved wood elements. The sound enhancement systems or multi-media systems should be controllable at or near the speaking podium, as well as at some other locations and the most advanced such systems should be used. Two large, power operated (from a ceiling slot), projection screens should be provided behind the speaking platform as a minimum. Since activities in this space may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 52 or better) should also be provided by the permanent partitions. The height of the raised platform in this space is 14” (two riser’s worth) at the primary plain and an additional 7” for each riser at the back for standing choirs or presentation groups. The individual areas of this space and the primary entry doors shall receive locksets of a type operable by staff. High ceiling volumes, decorated ceiling treatments, and special trim are appropriate for this space. Floors shall be carpeted, walls shall be a mix of painted wall board and fabric wall covering with chair rails and special wood or plaster trim. Wall base shall be wood. A high quality suspended wallboard ceiling shall be used with special lighting. The goal is to accent the importance and volume of this space. The appropriate ceiling height for this space shall be 23’-0” for the lowest point .

4.4 EXPANSION AREA/CLASSROOM

4.4.1 General Expansion Area/Classroom Requirements

This space is intended to provide a little more capacity to balance out the needs of the two large group spaces on either side, especially when separate functions are occurring in both the Worship Center and the Activity Center. It also allows one or more small groups to meet in the space between these large rooms so long as these small group activities neither create noise nor will be bothered by noise in the two large rooms.

4.4.2 Seating

Seating in this space should be of the folding or stacking type for use in rows or with tables. There must also be folding tables available to be set up in this space for the expansion of sit-down type meals or seminars from the Activity Center.

4.4.3 Functional Details

The appropriate “Functional Details” for this area are as follows: The space will need to include features that allow for the control of light, sound and temperature with a maximum of ease and flexibility. It will also be important to include visual cues, finishes and color schemes that tie this space to the worship center/auditorium for those activities when this series of individual spaces functions as one large space. Two pairs of screens, one to either side facing each way shall be installed, so that enlarged images of what is going on up front could be projected at a location closer to the back rows of seating. Since activities in this space may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 52 or better) should also be provided by the permanent partitions. The individual areas of this space and the primary entry doors shall receive locksets of a type operable by staff. High ceiling volumes, decorated ceiling treatments, and special trim are appropriate for this space. Floors shall be carpeted, walls shall be a mix of painted wall board and fabric wall covering with chair rails and special wood or plaster trim. Wall base shall be wood. A high quality suspended wallboard ceiling shall be used with special lighting. The goal is to accent the importance and volume of this space. The ceiling height for this space shall be 20'-0" for the lowest point or where the ceiling volume is kept level across the entire space.

4.5 ACTIVITY CENTER (FOR LARGE GROUPS)

4.5.1 General Large Group Activity Center Requirements

The large group activity center is also designed around a symmetrical axis so the focus of the gathered community benefits from an optimum line of sight and natural acoustic characteristics. This space arrangement allows for a clear ability to view presentations best accommodated by a stage type raised platform. The operable partitions across the back allow larger groups to be seated in the worship center/auditorium by extending the seating area into the large group activity room. The raised platform accommodates teachers, individual speakers or activity leaders, instruments, instrumental groups, group presentations such as skits or dramatic performances. Another key feature of the raised platform in this space must be setting up the area beneath it for the storage of chairs and tables. This will require a rough duty surface finish in this storage area, access doors that are both very strong and attractive from the outside and possibly the placement of some “track” devices to direct rolling carts.

4.5.2 Seating

Seating in the large group activity center is to be of the folding type, easily stored away when not in use and capable of any orientation. There must also be folding tables available to be set up in this space for sit-down type meals or seminars. The kitchen has been placed adjacent to this space to support the food related activities. With no seats set up the space may be used for organized play. With seats in groupings, the space may be used for teaching or discussion. With seats set up in full rows the space may be used for

presentations, small ceremonies, or teaching activities.

4.5.3 Functional Details

The appropriate “Functional Details” for this area are as follows: The space will need to include features that allow for the control of light, sound and temperature with a maximum of ease and flexibility. It will also be important to include visual cues, finishes and color schemes that tie this space to the worship center/auditorium for those activities when it functions as one large space. The stage like raised platform should support presentations of all types, musical instruments or choral groups. As a space, the area should not include any religious decoration or symbols so that it is also appropriate for general military community use. Any sound enhancement systems should be controllable at or near the speaking podium when it is used, as well as at some other locations. Two large, power operated (from a ceiling slot), projection screens should be provided behind the speaking platform. A ceiling mounted screen on at the opposite end of the room from the raised platform shall be installed so that enlarged images of what is going on up front could be projected at a location closer to the back rows of seating. Since activities in this space may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 52 or better) should also be provided by the permanent partitions. The height of the raised platform in this space is 36” (six riser’s worth). The individual areas of this space and the primary entry doors shall receive locksets of a type operable by staff. High ceiling volumes, decorated ceiling treatments, and special trim are appropriate for this space. Floors shall be carpeted, walls shall be a mix of painted wall board and fabric wall covering with chair rails and special wood or plaster trim. Wall base shall be wood. A high quality suspended wallboard ceiling shall be used with special lighting. The goal is to accent the importance and volume of this space. The ceiling height for this space shall be 20’-0” for the lowest point or where the ceiling volume is kept level across the entire space.

4.6 BAPTISTERY SUITE

4.6.1 General Baptistery Suite Requirements

This suite of rooms allows for baptisms to take place on a very regular basis with an optimum of ease. Besides a standard manufacturer’s baptismal capable of full immersion baptisms, this suite includes a small group of changing rooms and space to stage and dry off so that water is easily contained to the area. Having a closed, securable suite also minimizes the risk of accidents with smaller children or persons who might otherwise be at some slight risk. The baptismal is to be raised and placed for ideal viewing by those seated in the worship center/auditorium.

4.6.2 Functional Details

The appropriate “Functional Details” for this functional area are as follows: The primary considerations for this suite of spaces are that it provide discreet space for the users and that it include finishes and features that will deal safely with the water and elevation change presented by the baptismal. Non-slip, easily mopped flooring, water resistant wall finishes and stain resisting fabrics will all need to be incorporated. In addition, special control devices such as applied and sealed strips or slightly sloped floor portions may be beneficial in keeping standing water from escaping into crevices and spaces where it could cause damage. Placement of electrical devices must be considered carefully as well. The primary entry doors shall receive locksets of a type operable by staff. Special use of lighting to accent baptism activities is also appropriate. Floors and wall base shall be ceramic or porcelain tile, walls at the baptism pool shall also be ceramic or porcelain tile. Walls at other portions of the suite shall be of painted wall board (special water resistant paints) or water resistant paneling. Ceilings that are visible from the worship center shall coordinate with the ceilings in that space. Other ceilings in the suite shall be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling height for this space can vary widely depending upon how it is integrated into the volume of the Worship Center, however, a height of 8’-0” is adequate.

4.7 KITCHEN WITH PANTRIES

4.7.1 General Kitchen with Pantries Requirements

This space has been placed so that it is directly accessible from the large group Activity Room and relatively accessible to the general corridor system so that it can serve larger group functions or the daily needs of staff members or small groups holding meetings in the facility. This room is planned for the distribution of pre-prepared food only. Residential type kitchen fixtures of heavy duty quality should be provided along with an appropriate mix of wall and base cabinets with under-counter space to store at least one rolling cart. Included items should be a stand-alone ice machine, two separate refrigerators, a “commercial type” range unit with an oven, an automatic dishwasher and a triple sink with a garbage disposal unit. Provide extra sinks as indicated on the plan. Some congregations may have special preferences about appliances or features for this space for a variety of reasons and this may be considered in developing the design. Each kitchen must also include two separate securable pantries. If a particular religious group requires special control of some of the food handling activities, the pantries are large enough to include some casework and work surfaces. Within an individual pantry, additional sub-dividing of securable storage space is possible. It is not intended, however, that every possible user have totally exclusive space.

4.7.2 Functional Details

The appropriate “Functional Details” for this area are as follows: The kitchen requires the same basic finishes, cabinets and features as any typical residential kitchen, although of a heavier duty nature. The major difference in this kitchen from one at home is the need to accommodate numerous people at once and to be able to secure some supplies while leaving others open to any building user. The amount of water and ice usage will vary more greatly also, so that a dedicated or larger hot water heater and a separate ice-making machine is necessary. The individual areas of this space and the primary entry doors shall receive locksets of a type operable by staff or representatives of the various user groups. Floors and wall base shall be of quarry or porcelain tile, walls shall be a mix of painted wall board and fabric wall covering. A hard non-absorbing surface is appropriate for the ceiling. The ceiling heights for these spaces shall be 9'-0”.

4.8 LOBBY/VESTIBULE/COAT//RECEPTION AREAS

4.8.1 General Lobby/Vestibule/Coat/Reception Areas Requirements

Part of what makes community work for every gathering of individuals is the informal visiting that takes place before and after specific activities. In addition, the simple process of entering and leaving a building in variable climates requires space to orient oneself, deal with cloaks, watch and wait for a ride or use the toilet facilities. This design definitive provides a primary and secondary set of spaces for this purpose as well as simple exits for Life Safety purposes. These are directly accessible from each side of the worship center/auditorium and the large group activity room.

4.8.2 Functional Details

The appropriate “Functional Details” for this area are as follows: These spaces are key elements in communicating a sense of entry and continuity in the whole facility and should not be treated as merely utility vestibules. Finishes and trim should clearly connect to the spaces with the highest quality of finish as well as with spaces of more simple finish. Where things are in relation to these spaces should also be relatively clear. Floor finish should consider the tracking in of water and dirt from the outside. Provide a - recessed entry mat or similar soiling control device. Slightly higher ceiling volumes, decorated ceiling treatments, and special trim are appropriate for this space. Some Installations may desire a recessed type floor mat in the entry vestibules. Otherwise, floors in the entry vestibules shall be of quarry or porcelain tile. This same material could be carried back into the rest of the space for some additional distance, but as the rest of the space shall be carpeted, some care will need to be given to the transition. Walls shall be a

mix of painted wallboard and fabric wall covering with chair rails and special wood or plaster trim. Wall base shall be wood. A special ceiling treatment is appropriate for the lobby spaces, but all the finish treatments of these spaces will also need to transition smoothly into that used for the general corridors. Within the lobbies the materials and treatment selected should clearly coordinate with those chosen for the Worship Center. The ceiling heights for these spaces shall be 14'-0".

4.9 SACRISTY/ROBING ROOM

4.9.1 General Sacristy/Robing Room Requirements

The sacristy/robing room is planned to support the needs of the staff in providing for various religious ceremonies. It includes securable space for vestments and robes, special symbol banners, special objects and the preparation of some of the sacramental materials.

4.9.2 Functional Details

The appropriate "Functional Details" for this area are as follows: The sacristy needs appropriate cabinet work for storage of a variety of religious objects and the preparation for and final disposition of sacramental materials, including one regular sink and one special "Sacrarium" sink. The room itself should be secure and there should be some ability to secure some of the storage spaces within it also. The primary entry door shall receive locksets of a type operable by staff. Floors shall be carpeted, walls shall be of painted wall board. Wall base shall be resilient base. Ceilings shall be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling height for these spaces shall be 9'-0".

4.10 RESOURCE CENTER

4.10.1 General Resource Center Requirements

The resource center is set up as the primary storage and distribution point for basic audio visual equipment, training supplies, office machinery etc.

4.10.2 Functional Details

The appropriate "Functional Details" for this area are as follows: The primary feature to provide for this space is the provision of some kind of fixed work and distribution surface and enough room to house a lot of shelving and wheeled carts. The primary entry doors shall receive locksets of a type operable by staff. Floors shall be carpeted, walls shall be of painted wall board with pre-manufactured bumper rails for protection from moving furniture or carts. Wall base shall be resilient base. Ceilings shall be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling heights for this space shall be 9'-0".

4.11 NOT USED

4.12 COVERED ENTRY "PORCH"

The variety of special functions and the range of ages and strengths of the various users of this facility (essentially all the military personnel and all of their family members and friends) is so great that a covered entry of significant size is very important and will inherently enhance the facilities ability to support gatherings of people in conjunction with worship, marriage and memorial activities in particular and the arrival and departure of infants and frail adults in general. It also visually speaks of the welcoming nature of the facility. Special paving, ceiling and lighting treatments of some sort would be appropriate for this area and should be designed to transition smoothly from the exterior character of the building into the interior character. Walls would simply be of the exposed exterior building materials.

4.13 MULTIPURPOSE ROOMS

4.13.1 General Multipurpose Rooms Requirements

The two rooms will accommodate a somewhat wider range of activities than General Use Classrooms, although some activities would be the same. They may serve the purpose of housing small groups for special worship, counsel, education or training of many sorts.

4.13.2 Functional Details

The appropriate “Functional Details” for this area are as follows: The Multipurpose Rooms by their nature are meant to accommodate many different activities for a variety of group sizes. They should include the finish, image, trim, casework and counter top surfaces of any professional quality conference room. One of the two might be given a slightly higher level of finish and furnishing. An appropriately sized, power operated (from a ceiling slot), projection screen should be provided at some point in this room, possibly on the diagonal side wall. Since activities in this space may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 52 or better) should also be provided by the permanent partitions. The primary entry doors shall receive locksets of a type operable by staff. Slightly higher ceiling volumes, decorated ceiling treatments, and special trim are appropriate for this space. Floors shall be carpeted, walls shall be a mix of painted wall board and fabric wall covering with chair rails and special wood or plaster trim. Wall base shall be wood. There are numerous high quality ceiling materials and treatments in combination with lighting systems that would be appropriate for this space. As a minimum, a high quality suspended wallboard ceiling shall be used with special lighting. The ceiling heights for these spaces shall be 9’-0”.

4.14 GENERAL USE CLASSROOMS

4.14.1 General Use Classrooms Requirements

All the classrooms may serve the purpose of housing small groups for education or training of many sorts. The general use classrooms are only described that way because they are not attached to a suite of special purpose rooms as described in the descriptions of the “suites” All the classrooms are accessible from the corridor and able to house an almost infinite number of small group activities. A variety of sizes has been provided from the larger multipurpose classrooms to the small rooms that also give access to the stage type raised platform of the large group activity room.

4.14.2 Functional Details

The appropriate “Functional Details” for this area are as follows: The classrooms by their nature are meant to be extremely multipurpose spaces for a variety of group sizes. They should include the finish, image, trim, casework and counter top surfaces (where included) of any less formal meeting or class room. Since activities in these spaces may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 45 or better) should also be provided by the permanent partitions. The entry doors shall receive locksets of a type operable by staff. Floors shall be carpeted, walls shall be of painted wall board with pre-manufactured bumper rails for protection from moving furniture or carts. Wall base shall be resilient base. Ceilings shall be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling heights for these spaces be 9’-0”.

4.15 SACRAMENT/RECONCILIATION/CLASSROOM SUITE

4.15.1 General Sacrament/Reconciliation/Classroom Suite Requirements

This special suite includes rooms dedicated to the discreet accommodation of sacramental and reconciliation activities and adjacent space that can be included for these activities or be made available for

general classroom use. The suite combination allows for optimum flexibility for use.

4.15.2 Functional Details

The appropriate “Functional Details” for this are as follows: These spaces should receive professional quality finish, image and trim in a scheme of materials and colors that coordinates well with the adjoining classroom space for those times when an activity includes both spaces as one. Since activities in these spaces may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 52 or better) should also be provided by the permanent partitions. The entry doors shall receive locksets of a type operable by staff. Floors shall be carpeted, walls shall be a mix of painted wall board and fabric wall covering with chair rails and special wood or plaster trim. Wall base shall be wood. A high quality suspended wallboard ceiling shall be used with special lighting. The ceiling heights for these spaces shall be 9’-0”.

4.16 CHOIR ROOM SUITE

4.16.1 General Choir Room Suite Requirements

This special suite includes a room dedicated to any choir groups associated with one of the religious communities and adjacent space which can be included for these activities or be made available for general classroom use. The suite combination allows for optimum flexibility for use.

4.16.2 Functional Details

The appropriate “Functional Details” for this area are as follows: These spaces should receive professional quality finish, image and trim in a scheme of materials and colors that coordinates well with the adjoining classroom space for those times when an activity includes both spaces as one. Since activities in these spaces may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 52 or better) should also be provided by the permanent partitions. The entry doors shall receive locksets of a type operable by staff. Floors shall be carpeted, walls shall be of painted wall board with pre-manufactured bumper rails for protection from moving furniture or carts. Wall base shall be resilient base. Ceilings shall be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling heights for these spaces be 9’-0”.

4.17 NURSERY ROOM SUITE

4.17.1 General Nursery Room Suite Requirements

This special suite includes rooms dedicated to the convenient for the accommodation of the infants and toddlers that are a part of many of the families using this facility and adjacent space which can be included for these activities or be made available for general classroom use. The suite combination allows for optimum flexibility for use.

4.17.2 Functional Details

The appropriate “Functional Details” for this area are as follows: These spaces should receive professional quality finish, image and trim in a scheme of materials and colors that coordinates well with the adjoining classroom space for those times when an activity includes both spaces as one. In addition a child friendly toilet room, a means of storing personal belongings for each child, and changing table casework should also be included. Special care in considering safety shall be exercised for every aspect of these spaces from utilities to finishes to window and door features. Since activities in these spaces may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 52 or better) should also be provided by the permanent partitions. The entry doors shall receive locksets of a type operable by staff. Floors may be carpeted or resilient (this should be discussed with the local representatives to see about particular

preferences), walls shall be of painted wall board with pre-manufactured bumper rails for protection from moving furniture or carts. Wall base shall be resilient base. All finishes must be safely compatible with frequent contact by small children. Ceilings shall be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling heights for these spaces shall be 9'-0".

4.18 CIRCULATION SPACE

4.18.1 General Circulation Space Requirements

The circulation space for this definitive design has been planned to enhance the use of the facility by the full range of groups making use of it and for single or multiple simultaneous groups or multiple groups scheduled with little time between them. In addition the circulation arrangement forms a natural buffer between some activities that naturally produce greater acoustic levels than other groups do. It provides for all life-safety needs and for general efficiency and economy of space.

4.18.2 Functional Details

The appropriate "Functional Details" for this area are as follows: These spaces should receive professional quality finish, image and trim in a scheme of materials and colors that enhances life-safety, controls noise and coordinates well with all other spaces. The circulation spaces are key elements in communicating a sense of continuity in the whole facility and should not be treated as merely utility passageways. Finishes and trim should clearly connect the spaces with the highest quality of finish with the spaces of more simple finish. Floors shall be carpeted. Walls shall be a mix of painted wallboard and fabric wall covering with pre-manufactured bumper rails for protection from moving furniture or carts. Wall base shall be wood. The ceiling treatment for the corridors shall generally be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. At several points the general circulation spaces flow into lobbies or other more highly finished spaces and the transitions shall be carefully considered. The ceiling heights for these spaces shall be 9'-0".

4.19 TOILET ROOMS

4.19.1 General Toilet Rooms Requirements

These spaces are a natural requirement for any facility housing numerous groups of people and the capacity and placement has been optimized for this definitive design.

4.19.2 Functional Details

The appropriate "Functional Details" for this area are as follows: These spaces should receive professional quality finish, image and trim in a scheme of materials and colors that is inherently sanitary and resistant to moisture and coordinates somewhat to the other spaces. Toilets should be complete with fixtures and accessories such as mirrors, dispensers, waste containers, courtesy shelves and coat hooks. Check with the Installation regarding their preferences on the provision of soap and towel dispensers. Recognize the need for occasional diaper changing outside the nursery by either parent and the fact that users will often be carrying personal items that need to be set down temporarily where they will not get wet. Visual privacy shall be provided. Since activities in these spaces may contrast with the activities in adjacent spaces, enhanced acoustic isolation (an STC of 52 or better) should also be provided by the permanent partitions. The entry doors shall generally receive only latchsets or privacy locksets (single person use rooms) although some Installations may prefer to have locksets of a type operable by staff available at some locations in the building. Floors, wall base and walls shall be of ceramic or porcelain tile, although the use of wainscots with painted wallboard above might also be considered. Ceilings shall be of suspended wallboard or of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling heights for these spaces shall be 9'-0".

4.20 JANITOR'S CLOSET

4.20.1 General Janitor's Closet Requirements

These spaces are a natural requirement for any facility.

4.20.2 Functional Details

The appropriate "Functional Details" for this area are as follows: These spaces do best with simple sturdy finishes in light colors. Since both wet and dry cleaning equipment may be included these spaces should have finish materials that handle occasional wetting. Provide a mop type sink and wall mounted shelf with mop hangers and hooks. The entry doors shall receive locksets of a type operable by staff. Floors and wall base shall be of ceramic or quarry tile. Walls shall be of painted wallboard. Ceilings shall be of suspended wallboard or of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling heights for these spaces shall be 9'-0".

4.21 STORAGE SPACES

4.21.1 General Storage Spaces Requirements

These spaces are a natural requirement for any facility housing numerous groups of people and requiring the placement or removal of large amounts of furnishings and supplies for different activities. The capacity and placement of storage has been optimized for this definitive design.

4.21.2 Functional Details

The appropriate "Functional Details" for this area are as follows: These spaces do best with simple sturdy finishes in "light colors". Since spaces can sometimes change use with other rooms, these spaces should still have similar kinds of finish materials as a typical classroom, for example. The entry doors shall receive locksets of a type operable by staff. Provide 3'-6" doors at the storage rooms because chair and table dollies can often be more difficult to maneuver. Floors shall be carpeted. Wall base shall be resilient. Walls shall be of painted wallboard or painted masonry if masonry forms some of the room perimeter and it seems appropriate. Ceilings shall be of suspended acoustic tile with recessed light fixtures in a typical grid pattern type exposed suspension system. The ceiling heights for these spaces shall be 9'-0".

4.22 EQUIPMENT (ALL TYPES) SPACES

4.22.1 General Equipment (All Types) Spaces Requirements

These spaces are also a natural requirement for any facility and each specific project developed from this design definitive must include the optimum capacity and placement of equipment space. This will require some extra coordination with the Installation.

4.22.2 Functional Details

The appropriate "Functional Details" for this area are as follows: These spaces also do best with simple sturdy finishes and light colors. Attic spaces with equipment may be relatively rough so long as all life-safety, maintenance and protective features are provided. Acoustic separation shall be carefully provided also. The entry doors shall receive locksets of a type operable by staff. Floors shall be exposed concrete. Wall base shall be resilient. Walls shall be of painted wallboard. Ceilings shall be exposed to the underside of the roof structure.

5 INTERIOR DESIGN

Interior Design is divided into two categories, building related interior design and furniture related interior design. *Building related interior design* is the design of building related interior finishes and includes the selection and specification of interior and exterior materials and finishes for the building environment. Items typically considered a part of the building design include, but are not limited to: exterior building materials, floor, wall and ceiling finishes, built-in casework, millwork, fixed equipment, ecclesiastical furniture, trim items, signage, window treatment, etc. Building related items are those materials and finishes that are generally applied or fastened to the building, ecclesiastical furniture is an exception. *Furniture related interior design* (furniture package) is the design of the interior furniture and furnishings, and includes selection and specification of these items. Items typically considered a part of the furniture package include, but are not limited to: freestanding furniture, artwork, accessories, drapery, portable equipment, decorative objects, etc. The furniture package consists of items that may be moved into the building after construction is complete and generally are not applied or fastened to the building. Furniture finishes and fabrics shall be appropriate for the intended use. Upholstery fabric (color, pattern and fiber content) shall be easily cleaned and help hide soiling. Patterned fabrics are recommended for seating.

The interior design shall create a warm, comfortable, and professional environment through the appropriate use of building materials, furniture, finishes, fabrics, color, texture, and the generous use of wood. High quality, functional, easily maintained and furnished spaces that can be adapted to the user's needs shall be provided. Building finishes and details and furniture style, finish and fabrics shall be complementary and provide a completely coordinated interior design. This feature allows furniture to be used in various locations within a building and allows furniture to be moved from one location to another while still providing a coordinated design. Consider spaces that open up to one another when selecting furniture and building finish and color selections.

The selection criteria presented below identifies the level of quality and special requirements for finishes and furniture, yet provides flexibility for the designer to make creative and appropriate selections to meet User requirements. Dimensions provided are approximate. Building design shall accommodate storage requirements for furniture within the facility. Furniture requiring storing shall be able to be stored within the available storage areas. Applicable requirements shall be incorporated from recognized national standards including the National Fire Codes, Life Safety Code, Americans with Disabilities Act-Accessibility Guidelines for Buildings and Facilities (ADA), Occupational Safety and Health Standards (OSHA), and the Uniform Building Code.

5.1 BUILDING RELATED INTERIOR DESIGN

All interior finishes and building equipment shall conform to applicable UFGS guide specifications, federal and military regulations. Interior and exterior building finishes and colors shall be coordinated with the User and Installation. In addition, the exterior building design shall comply with Installation exterior building guidance.

5.1.1 Building Finishes

Reference Section Architectural Design for locations of finish materials. Where a finish has not been indicated in this package, finish selection will follow applicable standards and User requirements.

5.1.1.1 Carpet:

Commercial 100% branded (federally registered trademark) nylon continuous filament, permanent static control, loop pile with multi-color (geometric, bold, directional or floral patterns shall not be used), minimum finished yarn weight of 875 grams per square meter (26 oz./sq. yd), 3.175 mm or 31.5/10cm (1/8") gauge minimum, minimum pile weight density of 4725, synthetic backing. Installation shall be direct glue down.

5.1.1.2 Ceramic Floor Tile and Base:

Unglazed, suitable for heavy commercial traffic, shall have less than 0.5 water absorption, and may be porcelain, quarry, or ceramic tile. Color shall extend uniformly through the body of the tile. Base shall be of the same material. Reduce the affects of slippery flooring by giving special consideration to coefficient of friction and slip resistance of wet flooring material in Baptistery Suite, Reception and Lobbies. Comply with requirements of the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADA).

5.1.1.3 Sheet Vinyl:

Sheet vinyl flooring shall be commercial grade with heat or chemically welded. Type shall be appropriate for intended use. Integral cove base is optional.

5.1.1.4 Wood Base, Cornice, Chair Rail and Other Wood Trim Items:

Shall be of same wood type, character and finish.

5.1.1.5 Resilient Base:

Base may be vinyl or rubber, 4" high and minimum of 1/8" thick.

5.1.1.6 Fabric Wallcovering:

Fabric with acrylic backing shall be colorfast, stain, and soil resistant, and shall comply with NFPA 101 for textile wall materials. Wallcovering shall be scrubable and washable.

5.1.1.7 Corner and Wall Protection:

Outside corners of walls with fabric wallcovering shall have cornerguards. Bumper rails shall protect walls from moving furniture, carts and dollies. Reference Section Architectural Design for locations.

5.1.1.8 Ceramic Wall Tile:

Smooth or textured glazed wall tile.

5.1.1.9 Art Glass - Optional:

The design does not include art glass, but it can be added at the request of the User. The art glass design shall be non-denominational.

5.1.1.10 Accordion Partitions:

Standard manufacturer's system with fabric or acoustical wall carpet finish in Worship and Activity Centers, and Blessed Sacrament/Classroom; vinyl wallcovering finish in classrooms. Partitions shall be designed for heavy use and have an STC rating of not less than 45.

5.1.1.11 Window Treatment:

Exterior windows shall have horizontal blinds or vertical blinds, with the exception of windows at building entrances and Classroom/Nursery Suite. Natural day light in Worship Center, Activity Center and Expansion Area/Classroom shall be controllable for projection viewing. The multi-purpose rooms shall also have drapery to provide room darkening for slide and film viewing. Drapery shall be provided in Worship Area to conceal view of baptistery when not in use. Worship Area baptistery drapery when in the open position shall not obscure view of baptistery. Drapery shall also be provided in Baptistery Suite to provide privacy for changing rooms. Drapery fabric in baptistery and changing areas will get wet. Drapery fabric

and fabrication shall be appropriate for the intended use and location.

5.1.1.12 Signage:

Signage system shall comply with the Americans with Disabilities Act-Accessibility Guidelines for Buildings and Facilities (ADA). Signage shall be standardized throughout the building and shall be flexible to allow for the addition and deletion of signs and information. Room signs and building directory shall be provided. Directory shall be located in reception area and lobbies and at a minimum shall identify location of Worship Area, Blessed Sacrament, Restrooms, and Chaplain's Offices. Coordinate other directory text requirements with Chaplain.

5.1.2 Building Equipment

5.1.2.1 Entry Mat:

Entry mat shall be classified for heavy commercial use and be of dirt-hiding construction. Type to be coordinated with User and Installation.

5.1.2.2 Baptistry Mat:

Slip-resistant mat(s) shall withstand disinfecting, shall be fixed to the floor surface and be removable for cleaning and drying. Mat(s) shall be continuous to provide cover for floor from baptistry steps to all changing room entrances and shall provide a safe traversable surface when dry, wet and submerged under water.

5.1.2.3 Marker Board (MB):

Wall mounted marker board with marker tray. Dry erase markings on marker board shall be removable with a felt eraser or dry cloth. Marker board size shall be 48" wide x 36" high in classrooms and 96" x 48" in multi-purpose rooms. Locate one in each classroom, except for Classroom/Blessed Sacrament Suite.

5.1.2.4 Enclosed Bulletin Board (BB):

Bulletin board with lockable safety glass doors. Size shall be 60" wide x 30" high. Locate two in the Reception Area.

5.1.2.5 Presentation Board (PB):

Wall hung wood cabinet with doors shall have marker board writing surface with marker tray, and projection screen. Locate one in each classroom in the Classroom/Blessed Sacrament Suite.

5.1.2.6 Changing Room Bench:

Built-in maple or hardwood bench with moisture resistant finish. Size shall be 19" deep x 18" high.

5.1.2.7 Diaper Changing Unit:

Pre-manufactured unit specifically designed for diaper changing shall be wall mounted and designed to self-store up against the wall it is mounted when not in the open position. Unit shall have safety features normally required for this type of unit. Depth in the closed position shall be 3".

5.1.3 Ecclesiastical Furniture

A variety of ecclesiastical furniture is required for worship and other chapel areas. All furniture and decorative motifs shall be designed to serve all faiths and coordinate with and complement the building

finishes and design. Ecclesiastical furniture items shall be high quality wood construction and similar style. Furniture shall not have sharp edges. Clips, screws and other furniture construction elements shall be concealed where possible. Furniture shall be designed for ease of mobility and shall be constructed according to guidelines of the Architectural Woodwork Institute, premium grade. All veneers and solid wood pieces shall be Grade 1, premium quality, plain, quarter or rift sawn. Furniture upholstery and finishes, and drapery located in the Worship Center, Activity Center, and Expansion Area/Classroom shall all be coordinated. Upholstery in Worship Areas shall meet Wyzenbeek Abrasion Test 175,000 minimum double rubs.

5.1.3.1 Altar (E-1):

59" wide x 29.5" deep x 38.375" high

5.1.3.2 Altar, Small (E-2):

47.25" wide x 29.5" deep x 38.375" high

5.1.3.3 Communion Table (E-3) – Required:

59" wide x 29.5" deep x 29.5" high

5.1.3.4 Credence Table (E-4) – Required:

35.5" wide x 23.625" deep x 29.5" high

5.1.3.5 Offertory Table (E-5):

24" wide x 16" deep x 30" high

The altar, communion table, credence table and offertory table shall all be constructed of solid wood and have the same style and detail.

5.1.3.6 Lectern (E-6):

23.625" wide x 20.625" deep x 41.375" high at front of reading surface and 35" high at back.

5.1.3.7 Pulpit (E-7):

31.875" wide x 26" deep x 48" high with sloped reading surface and bookshelf.

5.1.3.8 Pews (E-8):

Pews shall be fixed and have upholstered cushion, seat, back and kneeler, contoured seat and back, and waterfall front. The following standard options shall be available: storage for hymnals, communion cup holder, and pencil and envelope/card holder. Kneeler rotates for out of the way storage.

5.1.3.9 Stacking Pew Chair with Kneeler (E-9):

Upholstered cushion seat, back and kneeler. Chair shall allow for the following standard options: ganging, and under seat bookrack. Size 19.625" wide x 22.625" deep x 32.5" high. Kneeler stores under chair for out of the way storage.

5.1.3.10 Chancel Chair (E-10):

Chair shall have arms and upholstered seat and back cushion. Size 23.625" wide x 23.625" deep x 33" high

5.1.3.11 Stacking Chair for Choir (E-11):

Upholstered seat and back cushion. Size 19" wide x 19" wide x 31.5" high.

5.1.3.12 Baptismal Font (E-12):

23.625" wide x 23.625" deep x 35.5" high with metal or ceramic receptor. Top receptor diameter 17.75".

5.1.3.13 Kneeler/Prie-Dieu with Screen (E-13):

Kneeler with privacy screen. Kneeler size 21.625' wide x 20.625" deep x 31.5" high and a 21.625" wide x 8.875" deep x 1.75" thick fabric upholstered cushion.

5.1.3.14 Altar Rail Unit (E-14):

Rail unit size 47.25" wide x 20.625" deep x 31.5" high. Unit shall have a 47.25" wide x 8.875" deep x 1.75" thick upholstered cushion.

5.1.3.15 Portable Altar (E-15):

Lightweight portable altar breaks down for ease of carrying and compact storage.

5.2 FURNITURE RELATED INTERIOR DESIGN

Procurement methodology for furniture shall be established at the beginning of the design process so the designer is aware of all the acceptable sources available for furniture and develops a procurable furniture package. Furniture shall not have sharp edges. Clips, screws and other furniture construction elements shall be concealed where possible. Hard surfaces such as a plastic shell, metal or wood shall be considered for seating located in areas where food and drinks are consumed or where craft projects are made. Upholstery in office areas and lounge furniture shall meet Wyzenbeek Abrasion Test; 50,000 minimum double rubs.

5.2.1 Seating

5.2.1.1 Desk Chair (S-1):

Ergonomic mid-management type desk chair with arms, separate upholstered cushioned seat and back, back tilt and locking capability, pneumatic seat height adjustment, back height adjustment, seat depth adjustment, five star base on casters. Size 24" wide x 26" deep x 35.875-41.75" high.

5.2.1.2 Task Chair (S-2):

Ergonomic desk chair with separate upholstered cushioned seat and back, back tilt and locking capability, pneumatic seat height adjustment, back height adjustment, seat depth adjustment, five star base on casters, adjustable arms. Size 24" wide x 26" deep x 31.875- 37.75" high.

5.2.1.3 Guest Chair (S-3):

Chair with arms and upholstered cushioned seat and back. Style shall complement the desk and task chairs. Size 20.625 wide x 22.625" deep x 29.5" high.

5.2.1.4 Lounge Chair (S-4):

Fully upholstered lounge furniture with enclosed arms. Armrests and legs may be wood. Frame shall be

solid hardwood with all parts glued and fastened. Size 31" wide x 31" deep x 33" high.

5.2.1.5 Loveseat (S-5):

Fully upholstered lounge furniture with enclosed arms. Armrests and legs/base may be wood. Size 54" wide x 31" deep x 33" high.

5.2.1.6 Stacking Chair (S-6):

Sled base high-density stacking, stacks 30-50 on dolly, with glides. Glides shall be appropriate for floor finish. Frame shall be solid base stock with chrome plate or durable color finish. Polypropylene or steel seat and back, shall be galvanized if intended for outdoors. Size 19.625" wide x 22.875" deep x 31.5" overall height, 17.75" seat height.

5.2.1.7 Stacking Chair Dolly (S-7):

Dolly shall stack 30-50 chairs and shall fit through single wide door with stacked chairs.

5.2.1.8 Upholstered Folding Chair (S-8):

Metal folding chair with upholstered seat and back cushion.

5.2.1.9 Upholstered Folding Chair Dolly (S-9):

Dolly type, size and quantity shall transport and store the required number of stored chairs. Fully loaded dolly shall be capable of being maneuvered within the facility, fit through a single wide door, and through doors under Activity Center Raised Platform.

5.2.1.10 Small Children's Chair (S-10):

Stackable children's chair with easily maintainable finishes, heavy-duty construction. For preschool through 2nd grade. Size 16.375" wide x 15.375" deep x 23" overall height, 14" seat height.

5.2.1.11 Medium Children's Chair (S-11):

Stackable children's chair with easily maintainable finishes, heavy-duty construction. For 2nd through 4th grade. Size 18.375" wide x 18" deep x 26.375" overall height, 14" seat height.

5.2.1.12 Rocker/Glider with Ottoman (S-12):

Chair base remains stationary while upper seat has rocking/gliding motion. Chair shall have coordinating ottoman. Chair and ottoman constructed of wood. Removable upholstered seat and back cushions shall be available. Upholstered cushions shall be removable in the field. Size 23" wide x 26" deep x 43.875" high.

5.2.2 Casegoods

Furniture can be wood, plastic laminate or metal finish. Glass tops shall be provided for furniture with wood tops. Tops for casegoods with plastic laminate or metal construction shall be plastic laminate. Location, use and frequency of moving furniture shall be considered when determining appropriate finish material and construction. Furniture constructed of particleboard with plastic laminate finish does not withstand moves well. Box and file drawers shall have a heavy-duty suspension system. Furniture shall be constructed with concealed fasteners. Furniture storage shall be lockable. Style details and finishes shall be coordinated in a room.

5.2.2.1 U-Shaped Workstation (D-1):

Workstation shall have primary worksurface with pedestal; desk height return with adjustable keyboard tray and mouse attachment; and secondary worksurface with pedestal, lockable overhead storage, tackboard, and task light. Unit shall also have modesty panels and pencil drawer. Size: primary worksurface - 70.25" wide x 30" deep, return - 42" wide x 24" deep, secondary worksurface – 70.25" wide x 20" deep, worksurface height 29.5".

5.2.2.2 Desk with Return (D-2):

Desk has desk height return, two lockable pedestals, and pencil drawer. Return has adjustable keyboard tray with mouse attachment. Size: primary worksurface - 70.25" wide x 30" deep, return - 42" wide x 24" deep, worksurface height 29.5".

5.2.2.3 Secretarial Workstation (D-3):

Workstation shall have primary worksurface with pedestal; desk height return with adjustable keyboard tray and mouse attachment; and secondary worksurface with pedestal. Storage shall be lockable. Unit shall also have modesty panels and pencil drawer. Size: primary worksurface - 70.25" wide x 30" deep, return - 42" wide x 24" deep, secondary worksurface – 70.25" wide x 20" deep, worksurface height 29.5".

5.2.2.4 Bookcase (D-4):

Five-shelf bookcase with 4 adjustable shelves. Size 36" wide x 15" deep x 66" high. Bookcases/shelving in Resource Center shall be deep enough to store required materials and supplies.

5.2.2.5 Two Drawer Lateral File (D-5):

Coordinate filing type, hanging or compressor, with User. Provide counterbalance. Size 30" wide x 19.625" deep x 29.5" high.

5.2.2.6 Four Drawer Lateral File (D-6):

Coordinate filing type, hanging or compressor, with User. Provide counterbalance. Size 30" wide x 19.625" deep x 56" high.

5.2.3 Tables

5.2.3.1 Multi-Purpose Table (T-1):

Tables shall be designed for heavy use, be adjustable in height, and have folding legs with automatic locking leg feature. Consider lightweight tables and tables with easy clean surface. All working parts shall be recessed behind an apron. Top surface and edge treatment shall withstand heavy use. Size 72" long x 36" deep x 20.625"-30.5" high.

5.2.3.2 Children's Table (T-2):

Tables shall be designed for heavy use, be adjustable in height, and have folding legs with automatic locking leg feature. Consider lightweight tables and tables with easy clean surface. All working parts shall be recessed behind an apron. Top surface and edge treatment shall withstand heavy use. Size 72" long x 29.5" deep x 20.625"-30.5" high.

5.2.3.3 Classroom/Children's Table Dolly (T-3):

Dolly type, size and quantity shall transport and store the required number of tables. Fully loaded dolly

shall be capable of being maneuvered within the facility, fit through a singlewide door, and through doors under Activity Center Raised Platform.

5.2.3.4 Lobby End Table (T-4):

Detailing and finish to match seating and other furnishings in room. Tabletop shall be easily cleaned and maintained. Size 23.625" wide by 23.625" deep x 21.625" high.

5.2.3.5 Nursing Room End TableT-5):

Detailing and finish to match seating and other furnishings in room. Tabletop shall be easily cleaned and maintained. Size 23.625" wide by 23.625" deep x 21.625" high.

5.2.4 Miscellaneous

5.2.4.1 Portable Podium (M-1):

Movable stand-up pedestal base lectern, adjustable height and angled reading shelf with pen rail to prevent items from sliding off shelf.

5.2.4.2 TV Cart (M-2):

Three shelf mobile cart. Size appropriately for TV size. Consider lockable cabinet for additional storage and/or TV.

5.2.4.3 Small Equipment Cart (M-3):

Mobile cart for audiovisual equipment. Size appropriately for equipment requirements.

5.2.4.4 Organ (M-4):

Electronic organ to be appropriately sized for the number of seats in Worship Center. Contact local suppliers for advice on selection.

5.2.4.5 Grand Piano (M-5):

Size of facility will affect type of piano required. Contact local suppliers for advice on selection.

5.2.4.6 Upright Piano (M-7):

Moveable upright piano. Contact local suppliers for advice on selection.

5.2.4.7 Refrigerator (M-8):

Contact local suppliers for advice on selection. Each unit shall have a minimum 0.4 cubic meters of storage volume and include compartments for freezing and cooling. Swing of door shall be appropriate to traffic flow in kitchen. Recommend selecting an energy sufficient, heavy use refrigerator. An automatic icemaker is not required since facility will have an icemaker. Each facility shall determine what size, features, storage compartments and configurations are required to meet the requirements of the congregations since requirements may vary.

5.2.4.8 Range (M-9):

Contact local suppliers for advice on selection. Recommend a single oven, automatic control, oven viewing window, clock, oven interior light, and four surface burners. Provide a commercial style range. If a commercial style range is chosen, the designer must revise the design to accommodate the larger size.

5.2.4.9 Dishwasher (M-10):

Contact local suppliers for advice on selection. Each facility shall determine which capacity, control features, and dishware arrangements are required to meet the requirements of the congregations since requirements may vary. Coordinate size of dishwasher with kitchen layout, features and casework to assure it is compatible with the kitchen configuration.

5.2.4.10 Ice Machine (M-11):

Contact local suppliers for advice on selection. A simple design of sturdy components and easily understood operation controls is recommended. Suggest selecting an energy sufficient unit that uses modern refrigerants. The speed of ice production and the amount of ice storage capacity can vary widely, determine facility requirements. Discuss options with local supplier and type of ice required (cubes, half cubes, crushed, etc.) if there is a preference. Consider the unit's noise production and heat load.

5.2.5 Furniture Requirements

Following are the recommended furniture requirements:

5.2.5.1 Chapel Center (400 Seat)

5.2.5.2

See Table No. 2 located in Appendix K.

6 SYSTEM DESIGN

6.1 STRUCTURAL DESIGN

For this facility, a wide variety of structural systems may prove suitable. The requirements of the applicable design criteria, characteristics of the site and the materials preferred by the installation shall particularly be considered. The longer than normal spans in the large seating areas and the support of movable partitions are two aspects of the design that must be given careful consideration. The specific criteria document provided for each project will define additional requirements, some of which may involve special security features.

6.2 MECHANICAL SYSTEMS

Geographic location and climate shall determine the basic requirements for heating and cooling. Selection of energy sources and mechanical systems for heating and cooling shall be based on local availability and Life Cycle costs. All designs shall comply with the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), Military Handbooks, and Engineering Technical Letters (ETL). There will also be specific project requirements and an energy budget to design to.

All mechanical systems, including the ductwork, grills and diffusers shall be well concealed from inhabited spaces. Coordinate with other members of the design team, such that concealed shafts or pathways are provided where mechanical systems require them. Outdoor intake and return louvers shall be designed in such a way that general public access to these components are restricted. Controls need to be easily accessed by staff but relatively secure from the general public. This facility will be used in many different ways. Some spaces will be filled to capacity at the same time that other spaces will be empty. Provide carefully considered zoning to accommodate the optimum number of use combinations. Mechanical ventilation shall be in compliance with ASHRAE Std. 62. In general, space set-aside to house mechanical equipment or systems shall not be used for other purposes.

The total mechanical floor space for this type of facility should be the sum of the mechanical equipment room and the loading platform (mezzanine). All primary and intermediate equipment of the HVAC, and plumbing system should be provided in the mechanical equipment room and the mezzanine. Air

conditioner equipment dedicated to provide zone control to different essential areas should be scattered around the mezzanine. Accessibility for future maintenance to the mechanical equipment should be taken in account in the design and selection of all mechanical equipment.

Acoustics is an important consideration in the design of chapels. Therefore, mechanical equipment items placed outside and adjacent to the building shall require screening and appropriate acoustic control. Also ensure that operating noises do not intrude into inhabited areas. Designer shall make an effort to design the air distribution less or equal 20 NC. Access clearances for servicing and proper airflow shall be provided when developing the screening and acoustic control.

An energy management system with override capacity accessible to the user shall be provided. The possible requirement for a future connection to an installation-wide EMCS shall be investigated and appropriate provisions made in accordance with the specific criteria provided for the project.

6.3 PLUMBING SYSTEMS

Underground domestic water supply, storm and sanitary sewers are required. Toilet facilities, kitchen and floor drains make up the majority of the plumbing requirements in this facility. A domestic hot water heater for the kitchen, baptistery and sinks is to be provided. A special sink with a drain extended to the ground needs to be provided for the Sacarium. Some additional plumbing features may be required for some specific projects, such as sinks in classrooms where a lot of crafts are part of the regular program. An exterior Water supply for landscaping may be considered in appropriate climates. All other plumbing requirements shall be in accordance with the criteria package provided with the specific project.

6.4 FIRE AND LIFE SAFETY SYSTEMS

Fire protection, emergency lighting and other Life Safety systems shall be in accordance with NFPA codes and the criteria package provided with the specific project and as indicated by a detailed code analysis (particularly of applicable NFPA codes) that considers actual site conditions and related project characteristics. The building shall have a fire alarm evacuation system with manual pull stations, audible and visual alarms, zone controls and an annunciator panel. Emergency lighting and night lighting are essential. Emergency and exit access lighting shall be on a special emergency power system or have battery backup. All systems shall be complete with special signage or other features required to make them function properly.

6.5 ELECTRICAL SYSTEMS

6.5.1 General

Electrical design shall be in accordance with the criteria package provided with the specific project. Lighting for this facility will be according to all applicable criteria and will take into consideration the functional needs of the spaces. This, along with fans and fractional horsepower motors, will make up the majority of the electrical loads for the facility. A budget of 100 watts per square meter for lighting and miscellaneous 120-volt receptacles should suffice. An additional 50 watts per square meter should be budgeted for mechanical systems. Additional power may be necessary if electrical air conditioning is allowed. And, some additional power may also be necessary for specialty items on specific projects. Electrical service to the facility shall be underground, if possible.

The activities supported by this facility will make extensive use of multiple media and these need to be carefully selected and integrated into the facility. This aspect of the design shall be carefully considered and knowledgeable consultants be secured to correctly integrate these features into the design. This may include coordination with installation-wide systems for computer and video activities. Lighting levels, exterior lighting for parking areas and walkways, and all other electrical design aspects shall be per criteria.

Sufficient floor and wall outlets shall be provided for power and microphones at expected platform locations. A microphone jack shall also be provided in the baptismal area. To make these spaces function

to their maximum potential, the designer will have to thoroughly study the different ways in which they may be used.

The capabilities for a tie-in to a future basewide communications system shall be provided. Videotaping of presentations made in the activity center or worship center may be desirable by the user and should be considered.

6.5.2 Lighting Requirements

6.5.2.1 General

Ambient lighting shall be provided with concealed cove or other type of fixtures with appropriate control devices. Accent, spot, and other specialty lighting may also be used to support the various worship activity needs of the space and the local congregations. All fixture and other lighting design decisions must be according to the latest criteria, and such decisions must include accommodations for reasonably easy maintenance, control, and adjustment.

6.5.2.2 Narthex

The Narthex is the main circulation and gathering place in the facility. Skylights bring natural light into the space while electric light fixtures provide the balance of the ambient light.

6.5.2.3 Administrative Offices

Lighting for office areas will be from recessed light fixtures.

6.5.2.4 Activity Center (Scheme B)

Lighting should be carefully considered for this space. It must integrate well with the lighting provided in the Worship Center and also provide for the special needs of the raised platform.

6.5.2.5 Classrooms

Lighting for classrooms will be from recessed lighting fixtures.

6.5.2.6 Nursery

Lighting design should provide some extra flexibility since this room may function as a regular classroom.

6.5.2.7 Blessed Sacrament /Reconciliation Room

Since colored, stained, or faceted glass is used, special lighting features and flexibility should be used in the design of this area.

6.5.3 Power Requirements

6.5.3.1 Kitchen

Residential type kitchen equipment shall be provided for kitchen equipment. Type of equipment shall be a range with a oven, two refrigerators, an automatic dishwasher and double sink with garbage disposal unit. Some congregations may prefer that some appliance pieces be of a commercial grade for heavier duty capacity.

6.5.3.2 Mechanical Equipment

Requirements for heating, ventilation, and air conditioning system shall be determined by the project criteria package. Heating, ventilation, and air conditioning system may be distributed into several smaller units through out the building because of difficulty in running duct systems through the building.

Mechanical / Electrical room may be divided into separate rooms. If this is the case, each room shall have exterior access. Mechanical / Electrical rooms are not to be used for any other purpose unless agreed to by the appropriate mechanical / electrical designers.

All exterior on-grade mechanical and electrical equipment shall be located within an enclosed area. Access around equipment shall be provided for service and air flow.

In cold climates provide features which will protect plumbing, water lines, and other lines from freezing.

6.5.3.3 Support Facilities

Full-Immersion Baptistry will require power to run a circulating pump and heater. No other power except lighting will be allowed in the Baptistry Alcove. Baptistry adjacent changing rooms will require exhaust fans and GFI receptacles for hair dryers.

6.5.4 Fire Detection and Emergency Lighting

The building shall have a fire alarm evacuation system with manual pull stations, audible and visual alarms, zone control, and an annunciator panel. NFPA standards and other typical criteria will apply as applicable. A detailed code analysis, which considers actual site conditions, must be undertaken to determine all life safety requirements.

Emergency lighting and night lighting are essential. Emergency and exit access lighting shall be on the base emergency power system or battery back up. All signage as required by life safety codes are to be included in designs.

6.5.5 Communication Requirements

6.5.5.1 General

A high quality, low-level distributed loudspeaker system is most appropriate in this design to facilitate a relatively uniform distribution of sound to accommodate the diversity of room and seating configurations contemplated. The sound system shall provide for separate operation of the worship center and activity center.

Recessed speakers shall be used in each of the two flat ceiling areas on either side of the main worship center. Additional speakers will be required in the activity center. Uniformity of coverage between the frequencies of 100-12,00 Hertz will need to be + 4db.

The flexibility of seating arrangements requires a speaker selector switch panel to turn off selected speakers and minimize feedback problems. When the space is configured with two hundred seats or less, little sound reinforcement may be required.

To permit freedom of movement on the part of the clergy within the worship center, wireless lavalier and hand held-held microphones may be used. The amplifier rack should be located in the storage room adjacent to the baptistry. Sound controls are to be located in the worship center near the Narthex entrance doors. Sound controls for the activity center shall be located near the main entrance of the space in both cases, controls should be wall-mounted and concealed behind a door which integrates with the space aesthetics.

6.5.5.2 Communication Requirements for Specific Areas

This includes telephone, audio, video, cable, and computer requirements for specific rooms. A communication room other than a multimedia room shall be provided for telephone terminal racks, LAN fiber racks, and cable racks that enter the building.

6.5.5.2.1 Administrative Space for the Unit Ministry Team

Chaplain Office (Private Office)

This space requires telephone connection, computer network connection, and an audio connection with a wall or ceiling speaker and (on-off-volume) controls.

Chaplain Office (Private Office)

This space requires telephone connection, computer network connection, and an audio connection with a wall or ceiling speaker and (on-off-volume) controls.

Assistant's Area (Group Office)

This space requires multiple telephone connections, multiple computer network connections, and an audio connection with a wall or ceiling speaker and (on-off-volume) controls. This space should also be the central controlling point for all the systems.

Storage Room ((See Storage))

This space requires no connections.

6.5.5.2.2 Worship Center/Auditorium

Worship Center (Seating and Raised Platform)

This space requires a complete audio video (DVD etc. For example or latest) system, with multiple speaker locations, LCD projectors, projector screens and necessary controls including some control capability at the raised platform. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks. Provide connection points convenient to where musical instrument groups might be placed for presentations. Provide some connections for television type cameras to hook up to while recording presentations. Provide connections/accommodation for the wire and wireless, hand-held, mounted, lapel clip and belt clip types of microphones and lots of them; cover the musician areas, the podium, the baptistery and the choir locations. Provide convenient mounted control points for this equipment near (discreetly) the front podium and at one other point near the rear of the space.

Storage ((See Storage))

6.5.5.2.3 Expansion Area/Classroom

Expansion Area/Classroom

((See Multipurpose Rooms))
((General Use Classrooms))
((Sacrament/Reconciliation/Classroom Suite))
((Choir Room Suite))
((Nursery Room Suite))

This space requires integration with the complete audio video system in the Worship Center and the Activity Center with multiple speaker locations, possible LCD projectors, projector screens and necessary controls. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks. Provide some connections for television type cameras to hook up to while recording presentations. Minimal “stand-alone” capacity is required. Provide a convenient mounted control point for this equipment at one point along a side wall.

6.5.5.2.4 Activity Center (for large groups)

Activity Center (Seating and Raised Platform)
“Under-the-Platform Storage Space” ((See Storage))

This space requires a complete audio video system (connected to or separable from the Worship Center system or Expansion Area/Classroom System), with multiple speaker locations, LCD projectors, projector screens and necessary controls including some control capability at the raised platform. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks. Provide connection points convenient to where musical wireless, instrument groups might be placed for presentations. Provide some connections for television type cameras to hook up to while recording presentations. Provide connections/accommodation for the wire and hand-held, mounted, lapel clip and belt clip types of microphones and lots of them; cover the musician areas, the podium, the baptistry and the choir locations. Provide convenient mounted control points for this equipment near (discreetly) the “proscenium” opening and at one other point near the rear of the space.

6.5.5.2.5 Baptistry Suite

Baptistry Suite consists of entry, changing rooms, and baptizing area with heated pool.

This space requires no connections except to a single permanently mounted microphone on the wall above the front of the baptistry pool with a low-and-reachable-from-the-entry-side-of-the-area on and off switch.

6.5.5.2.6 Kitchen with Pantries

Kitchen

This space requires telephone connection with a wall or ceiling speaker and (on-off-volume) controls.

Pantry

These spaces require no connections.

6.5.5.2.7 Lobby/Narthex/Reception Area

Vestibule
Reception
Vestibule
Lobby
Vestibule
Lobby

These spaces require no connections, but should include good speakers for public-address type announcements.

6.5.5.2.8 Sacristy/Robing Room

Sacristy/Robing

This space requires telephone connection, a wall or ceiling speaker and (on-off-volume) controls.

Sacristy Storage	((See Storage))
Sacristy Storage	((See Storage))

These spaces require no connections.

6.5.5.2.9 Resource Center

Resource Center

This space requires telephone connection, computer network connection, and an audio connection with a wall or ceiling speaker and (on-off-volume) controls.

Office	(Private Office)
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This space requires telephone connection, computer network connection, and an audio connection with a wall or ceiling speaker and (on-off-volume) controls.

6.5.5.2.10 (Portable Equipment List)

Two portable microphone assemblies of various sorts
Two portable LCD projectors
Four portable slide projectors
Four TV-VCR or digital units on carts

6.5.5.2.11 NOT USED

6.5.5.2.12 Covered Entry “Porch”

“Primary Entry”

“Secondary Entry”

These spaces require a ceiling speaker controlled at the central control point for public-address type connections.

6.5.5.2.13 Multipurpose Rooms

Multipurpose Room

((See Expansion Area/Classroom))
((General Use Classrooms))
((Sac./Rec./Classroom Suite))
((Choir Room Suite))
((Nursery Room Suite))

This space requires a complete audio video system, with multiple speaker locations, an LCD projector, projector screen and necessary controls. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks. Provide connection points convenient to where musical instrument groups might be placed for presentations. Provide connections/accommodation for the wire and wireless, hand-held, mounted, lapel clip and belt clip types of microphones and lots of them; cover the musician areas, the podium, the baptistery and the choir locations. Provide a convenient mounted control point for this equipment at one sidewall.

Multipurpose Room

((See Expansion Area/Classroom))
((General Use Classrooms))
((Sac./Rec./Classroom Suite))
((Choir Room Suite))
((Nursery Room Suite))

This space requires a complete audio video system, with multiple speaker locations, an LCD projector, projector screen and necessary controls. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks. Provide connection points convenient to where musical instrument groups might be placed for presentations. Provide connections/accommodation for the wire and wireless, hand-held, mounted, lapel clip and belt clip types of microphones and lots of them; cover the musician areas, the podium, the baptistery and the choir locations.

6.5.5.2.14 General Use Classrooms

Each Classroom

((See Expansion Area/Classroom))
((Multipurpose Room))
((Sac./Rec./Classroom Suite))
((Choir Room Suite))
((Nursery Room Suite))

This space requires connection to the facility audio video system (cable TV, portable LCD projector), with a speaker location and necessary controls. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks.

This space requires connection to the facility audio video system (cable TV, portable LCD projector, with a speaker location and necessary controls. A connection suitable for a portable electronic musical instrument. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks. A connection to the room speakers in the Choir Room. Provide connections/accommodation for the wire and wireless, hand-held, mounted, lapel clip and belt clip types of microphones.

6.5.5.2.17 Nursery Room Suite

Classroom/Nursery	((See Expansion Area/Classroom))
	((Multipurpose Room))
	((Sac./Rec./Classroom Suite))
	((Choir Room Suite))
	((Nursery Room Suite)))

This space requires connection to the facility audio video system (cable TV, portable LCD projector, with a speaker location and necessary controls. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks.

Child's Restroom	((See Toilet Rooms))
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This space requires speakers.

Classroom	((See Expansion Area/Classroom))
	((Multipurpose Room))
	((Sac./Rec./Classroom Suite))
	((Choir Room Suite))
	((Nursery Room Suite)))

This space requires connection to the facility audio video system (cable TV, portable LCD projector, with a speaker location and necessary controls. Computer and computer network connections should also be provided at locations convenient for a portable-computer-contained and controlled presentation as well as to the central controlling and computer networks.

6.5.5.2.18 Circulation Space

"Corridor"

These spaces require speakers for public-address type messages.

6.5.5.2.19 Toilet Rooms

Restroom	
Restroom	
Restroom	
Restroom	
Toilet	
Child's Restroom	((See Nursery Room Suite))

These spaces require speakers for public-address type messages.

6.5.5.2.20 Janitor's Closet

Janitor's Closet

These spaces require no connections.

6.5.5.2.21 Storage Spaces

Storage speakers

Storage speakers

Storage

Storage ((See Administrative Space))

Storage ((See Worship Center))

Under-the-Platform Storage Space ((See Activity Center))

These spaces require no connections.

6.5.5.2.22 Equipment Spaces

Mechanical Equipment Room

Electrical Equipment Room

Communication Equipment Room

Audio/Visual Equipment Room

Mezzanine Access Stair

These spaces require speakers for public-address type messages.

6.6 ENVIRONMENTAL COORDINATION, PERMITS, NOTICES, REVIEWS AND/OR APPROVALS

The Contractor shall be responsible for contacting the appropriate Federal, State, Regional and local environmental agencies to identify all required environmental permits (construction and operating), notices, reviews, and approvals required for the project. Once the requirements are identified, the Contractor shall be responsible for coordinating the requirements with the Contracting Officer and the Base in regard to implementation for a Federal Facility project. The Contractor shall ensure that all coordination, permits, notices, reviews and/or approvals are completed and submitted with each applicable phase of the design. Prior to construction starting for any phase, the Contractor shall assure that all permits and/or approvals are received and copies are submitted to the Contracting Officer. The Contractor shall be responsible for any contract delays resulting from failure to obtain environmental permits, notices, reviews and/or approvals when required.

6.6.1 APPLICATIONS, SUPPORTING DOCUMENTS, AND FEES

The Contractor shall obtain and complete all environmental permit applications and notices including any documents that are required for a modification for an existing permit held by the Facility. The Contractor is responsible for preparing all supporting documents, including but not limited to engineering reports, emission surveys, diagrams, pollutant load calculations, etc. If, in lieu of permits, the governing agency requires review and approval of the design, the Contractor shall submit and obtain approval of the design and associated documents. The Contractor shall be responsible for all fees associated with the permits, applications, reviews, approvals, and notices.

6.6.2 PERMITS

The following is a listing of permits, notices, reviews, and/or approvals, which **may be** required for this project. This listing and requirements are not to be considered all-inclusive by the Contractor, but is provided as information that may be used in successfully accomplishing the environmental compliances.

6.6.2.1 NPDES Storm Water Permit for Construction Activities.

Coverage under the EPA Storm Water General Permit For Construction Activities is required. The Contractor shall be responsible for applying for the NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES and submittal to the appropriate agency.

6.6.2.2 Approval of new Water or Sewer lines.

If new water lines, sewer lines, lift stations are required for the site in most states. The plans and specifications usually have to have the state approval before being built. Some states do have an application form and other just require plans and specifications be stamped by a registered professional engineer from that state.

APPENDIX K TABLES

INTERIOR DESIGN ITEM LISTS

INDEX

TABLE 1	DOLLY INFORMATION
TABLE 2	CHAPEL (400 SEAT) FURNITURE REQUIREMENTS

TABLE NO. 2
CHAPEL CENTER (400 SEAT)
FURNITURE REQUIREMENT

CODE	ITEM	QTY	LOCATION
ECCLESIASTICAL FURNITURE			
E-1	Altar	1	Worship Area Raised Platform
E-2	Altar, Small	1	Classroom/Blessed Sacrament
E-3	Communion Table-Optional	1	Worship Area Raised Platform
E-4	Credence Table-Optional	1	Worship Area Raised Platform
E-5	Offertory Table	2	Worship Area Raised Platform
E-6	Lectern	1	Worship Area Raised Platform
E-7	Pulpit	1	Worship Area Raised Platform
E-8	Pew	400 Seats*	Worship Area
E-9	Stacking Pew Chair with Kneeler	30	Classroom/Blessed Sacrament
E-10	Chancel Chair	4	Worship Area
E-11	Stacking Chair for Choir	36	Worship Area Raised Platform
E-12	Baptismal Font	1	Worship Area
E-13	Kneeler/Prie-Dieu with Screen	1	Meditation/Reconciliation
E-14	Altar Rail Unit	1	Worship Area Raised Platform
E-15	Portable Altar	1	Activity Center Raised Platform
OFFICE/CLASSROOM/MISC.			
SEATING:			
S-1	Desk Chair	3	Chaplain's Office, Education Director
S-2	Task Chair	2	Assist's Area
S-3	Guest Chair	6	Chaplain's Office, Education Director
S-4	Lounge Chair	5	Reception, Assist's Area, Meditation/Reconciliation
S-5	Loveseat	1	Reception
S-6	Stacking Chair	270	Classrooms, Multi-Purpose Rooms
S-7	Stacking Chair Dolly	**	Storage
S-8	Upholstered Folding Chair	240	Expansion Area/Classroom, Activity Center, Activity Center Raised Platform
S-9	Upholstered Folding Chair Dolly	**	Storage
S-10	Small Children's Chair	40	Classroom/Nursery
S-11	Medium Children's Chair	24	Classrooms
S-12	Rocker/Glider with Glider	2	Nursing Room
DESKS/STORAGE:			
D-1	U-Shaped Workstation	3	Chaplain's Office, Education Director
D-2	Desk with Return	0	Not Used
D-3	Secretarial Workstation	2	Assist's Area
D-4	Bookcase	11	Chaplain's Office, Assist's Area and Resource Center
D-5	Two Drawer Lateral File	3	Chaplain's Office, Education Director
D-6	Four Drawer Lateral File	1	Assist's Area

* Recommended pew width per person is 500 mm – 560 mm (1'-8" to 1'-10").

** Number of dollies required is dependent on furniture and type of dolly specified. Reference paragraph
FURNITURE STORAGE REQUIREMENTS for storage requirements.

TABLE NO. 2
CHAPEL CENTER (400 SEAT)
FURNITURE REQUIREMENT

CODE	ITEM	QTY	LOCATION
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OFFICE/CLASSROOM/MISC. CONTINUED

TABLES:

T-1	Multi-Purpose Table	41	Classrooms, Expansion Area/Classroom, Multi-Purpose Rooms
T-2	Children's Table	6	Classrooms
T-3	Classroom/Children's Table Dolly	**	Storage
T-4	Lobby End Table	4	Reception, Assist's Area
T-5	Nursing Room End Table	1	Nursing Room

MISCELLANEOUS:

M-1	Portable Podium	2	Activity Center Raised Platform, Multi-Purpose Rooms
M-2	TV Cart	8	Resource Center, Classrooms, Multi-Purpose Rooms
M-3	Small Equipment Cart	1	Resource Center, Classrooms, Multi-Purpose Rooms
M-4	Organ	1	Worship Center Raised Platform
M-5	Grand Piano	***	Worship Center Raised Platform
M-6	Baby Grand Piano	***	Worship Center Raised Platform
M-7	Upright Piano	2	Multi-Purpose Rooms, Classroom/Choir
M-8	Refrigerator	2	Kitchen
M-9	Range	1	Kitchen
M-10	Dishwasher	1	Kitchen
M-11	Ice Machine	1	Kitchen
M-12	Outdoor Furniture-Optional+B29	TBD	Outdoors

** Number of dollies required is dependent on furniture and type of dolly specified. Reference paragraph FURNITURE STORAGE REQUIREMENTS for storage requirements.

*** Coordinate which is required, M-5 or M-6.

DOLLY INFORMATION

	Chapel -202		Chapel Center -400		Chapel Complex -600	
Dolly Description	Furniture Quantity	Dolly Quantity	Furniture Quantity	Dolly Quantity	Furniture Quantity	Dolly Quantity
Table (10 high)	26 tables	3 dollies	40 tables	4 dollies	77 tables	8 dollies
Stacking Chair * (45 high)	25 chairs (180)	1 dollies	store 91 chairs (270)	2 dollies	store 127 chairs (384)	3 dollies
Folding Chair (stacks 42)			239 chairs	6 dollies	580 chairs	6 dollies
(stacks 82)	153	2 dollies				4 dollies
* Does not include children's chairs. The first number in the furniture quantity column identifies the number of stacking chairs to be stored on dollies, the number in () is the total # of chairs in the facility.						

**APPENDIX L
FORT BENNING
MECHANICAL, PLUMBING
AND ELECTRICAL
PREFERENCES**

FT. BENNING PREFERENCES

Below is a list of Ft. Benning's preferences on mechanical and plumbing items.

1. Plumbing:

- a. Domestic water piping shall be Type "L" copper inside buildings.
- b. Water pipe from main to gate valve inside building can be schedule 40 PVC or SDR 26.
- c. Water piping under slabs or structures (road ways, walls, etc) must be encased in cast iron pipe sleeves.
- d. Drain piping where hot water exceeds 120 Degrees F must be cast iron piping in barracks and commercial buildings. Kitchen and mess halls must have heavy duty cast iron pipe (acid resistant/dura iron) for both drains and kitchen equipment.
- e. Drain piping in family housing can be schedule 40 DWV PVC pipe.
- f. All hot water tanks must have thermostatic relief valve and mixing valves as per new clean water act revision. Hot water tanks must be set at 140 Degrees F to prevent Legionnaires' disease from growing. Water from tank must be mixed with cold water to lower the temperature down to 110 Degrees F in family housing and 120 and 140 Degrees F in Barracks and commercial buildings.
- g. Hub Sewer pipe okay outside buildings.
- h. No oakum joint pipes are allowed due to clean water act.
- i. Grooved pipe okay for wash racks and around commercial grade hot water heaters.
- j. Thermostatic mixing faucets required at all plumbing fixtures that have hot water. They are required in case the thermostatic mixing valve at the hot water tanks/heaters fail and allow the 140 degree water into plumbing system.
- k. All new and renovations must have back flow prevention devices installed on the service to the building, all wall and lawn hydrants, and service sinks, and at HVAC equipment inside the building, and irrigation systems.
- l. Soft PVC liners are generally specified for shower pans when ceramic tile flooring is specified. We have been install solid polymer shower bases and stalls in barracks, commercial buildings and family housing where showers are installed. Bathtub swain walls are also specified to receive solid polymer wall panels and trim kits.
- m. Non historical housing - steel tubs with mortar pack under to prevent flexing.

n. Historical housing - cast iron tubs.

o. Floor mounted water closets.

p. Solid Polymer counter tops with integral bowls and back splashes when space allows, otherwise, wall mounted china.

2. HVAC

a. Boilers preferred are copper finned hot water boilers or water tube boilers. If heating load allows copper finned boilers, which would be the choice of this base. Steam boilers are required at mess halls and motor pools for cookers, kettles, and cleaning equipment.

b. 25% testing of weld initially.

c. Direct read register gas and water meters.

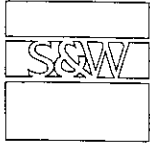
d. We try to stay away from duct lining. We have a tremendous problem with mildew and mold at this base as well as bats getting into return air duct.

e. We try to design HVAC duct systems utilizing handlers without VAV Boxes. We have a very small maintenance staff. Use zone dampers for control of remote areas and rooms.

f. We have been specifying direct digital control systems for HVAC (Invensys or Johnson Controls).

g. Do not use thermostatic controlled diffusers. These are headaches to maintain and are easily damaged by personnel.

h. Inside buildings, Okay to use copper or black steel piping. We utilize copper whenever we can. Around boilers we tend to stay with standard weight black steel with welded, grooved pipe and fittings, or threaded joints. Outside buildings, it is okay to use schedule 80 PVC pipe on chilled water lines unless prefabricated piping is specified, then carrier pipe can be schedule 40 PVC, copper, or black steel. Depends on location, vibrations, and operating pressures. Hot water and steam piping shall be standard weight black steam pipe for 3 inches and larger, copper otherwise.



M E M O

____ Telephone Conversation Memo

____ Memo to the Record

____ Meeting Notes Memo

____ Project Team Communication

Charette Meeting

05/21/02

SUBJECT

DATE

TO

Chapel L.I. 019315, Fort Benning, GA

PROJECT NAME

FROM

02061.00

PROJECT NUMBER

SIGNED

ATTENDEES (noted below)

DISTRIBUTION:

Please accept this memo as confirmation of Stevens & Wilkinson of Georgia, Inc.'s understanding. If your understanding is inconsistent, please notify Stevens & Wilkinson of Georgia, Inc. immediately.

Attendees:

Don Campbell	SW-GA	Project Manager	(404) 522-8888
Somchai Sirins	SW-GA	Architecture	(404) 522-8888
David Gray	SW-GA	Architecture	(404) 522-8888
Dale Brown	SW-GA	Mechanical	(404) 522-8888
Ken Daenecke	SW-GA	Electrical	(404) 522-8888
John Douglas	SW-SC	Civil Engineer	(803) 765-0320
Dean Miller (partial)			

Miller: Dave Moore with security has no concerns.

Charles Adams with Energy did not attend as planned.

5/21, 14:00

Larry Jones

DFEL

Historic Architect

(706) 545-1471

Campbell reviewed design with Larry Jones: massing used to break down scale of bldg; define main spaces and subsidiary spaces; main element of new to match scale of existing chapel; white EIFS walls; classical organization and simplified details; education facility attached to end of existing annex.

Stevens & Wilkinson

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M E M O

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Jones: use clay tile roof to get cost in budget in case SHPO requires it; possible deletion of small roof forms at front corners of new chapel and add a few more doric columns; SHPO review takes 30 days; 15 days for Benning to process; Jones will submit to SHPO after receipt of charette report; design will probably be okay with SHPO.

5/21, 11:00

Lt Col Dan Taylor

Garrison Chaplain

(706) 545-2050

Capt K Orvell

Chaplain

Lt Col Punke

Chaplain Inspector

Campbell: review design with Punke, Taylor, and Korvell; reviewed variations from standard design.

Taylor: need two projection screens at front

Punke: variations from standard design acceptable; HVAC system would not be imposed on base; two projection screens acceptable; need screen in front of first row of pews; need kneelers at pews; need removable communion rail; exterior design acceptable.

5/21/02, 14:00

walker fricks flint emc (478) 988-3510

paul roberts flint emc (478) 847-5168

Power Distribution:

WF indicated that primary distribution on base consists of 12.47/7.2kv, 3-phase, 4-wire overhead and underground systems; standard cables/conductors insulation are rated for 25 kv service.

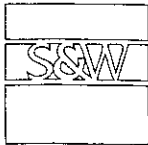
WF indicated that the existing Base power distribution system capacity is adequate to serve these facilities.

(WF) Service lateral to the Chapel will be underground fed from an existing overhead primary line on Ingersoll Road. A pad mounted transformer metered on the secondary side will be provided to serve the Chapel.

(WF) Service entrance to the Religious Education Facility will be underground fed from an existing overhead primary line on Brockman Street. An existing power pole will be replaced with a new RUS Class II, 45 foot pole to mount the overhead distribution type transformers to serve this facility. A meter will be provided on the secondary side at the pole.

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M E M O

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WF and PR indicated that all primary distribution work and transformation will be provided by Flint EMC and paid by this project.

KD gave WF and PR a site plan for them to indicate connection points and conductor sizes. This plan will be returned to KD for his use.

5/21/02

Jim Lance, DOIM (706)545-3333

Telecommunications:

(JL) Contractor will provide 3-4" conduits stubbed 5'-0" outside each building from the Telecommunications Rooms for CATV, voice and data services. Chapel.

(JL) A 12 strand single mode fiber optic (data) and 50 pair copper (voice) outside cable plants will be provided for the Religious Education Facility.

(JL) A 12 strand single mode fiber optic (data) and 100 pair copper (voice) outside cable plants will be provided for the Chapel.

(JL) Backboards (4' x 8') will be provided on three walls of the Telecommunications Room. Voice, data and CATV equipment will be mounted to the backboards.

(JL) CATV service will be provided by Time Warner. An empty conduit system with pull string will be provided for Time Warner's use. Time Warner will install cabling plants to each of the facilities, make terminations, provide devices and cabling to the outlet.

(JL) DCO is located in Bldg. 479, Upton Avenue. Fiber optic and copper outside cabling plants will be provided from the DCO to each building.

KD requested a site plan depicting fiber optic and copper cabling plants including manhole and pole locations.

(JL) The existing fiber optic and copper infrastructure is adequate to serve these facilities.

JL indicated that a manhole would be required to serve the Chapel from Vibbert Avenue. An existing ductbank and manhole system runs parallel to Vibbert Avenue. CATV/Voice/Data cabling plants will be extended through the new ductbank to serve the Chapel.

(JL) DOIM is responsible for pulling fiber optic and copper outside cabling plants to each of the facilities and making final terminations.

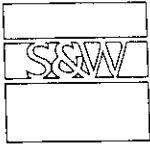
5/21/02, 15:00

Charles Adams DFEL (706)545-3325

Mickey Livingston DFEL (706)545-3325

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M E M O

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HVAC

Chapel: CA and ML prefer a chilled water system. Air cooled chiller with air handling units on a mezzanine. AHU's for Auditorium, Activity Center and (2) units for the remaining area. Total of (4) units..

Education Center: Packaged through the wall air unit in each classroom is acceptable.

(CA) (ML) Gas service is available at each site.

(CA) (ML) Temperature controls/EMS to be Johnson controls or Ivensys. Direct Digital Control type.

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